

FEB 23 1918

JAMES D. MINER,  
JRC.

63

No. ~~886~~

IN THE  
**Supreme Court of the United States.**

OCTOBER TERM, A. D. 1917.

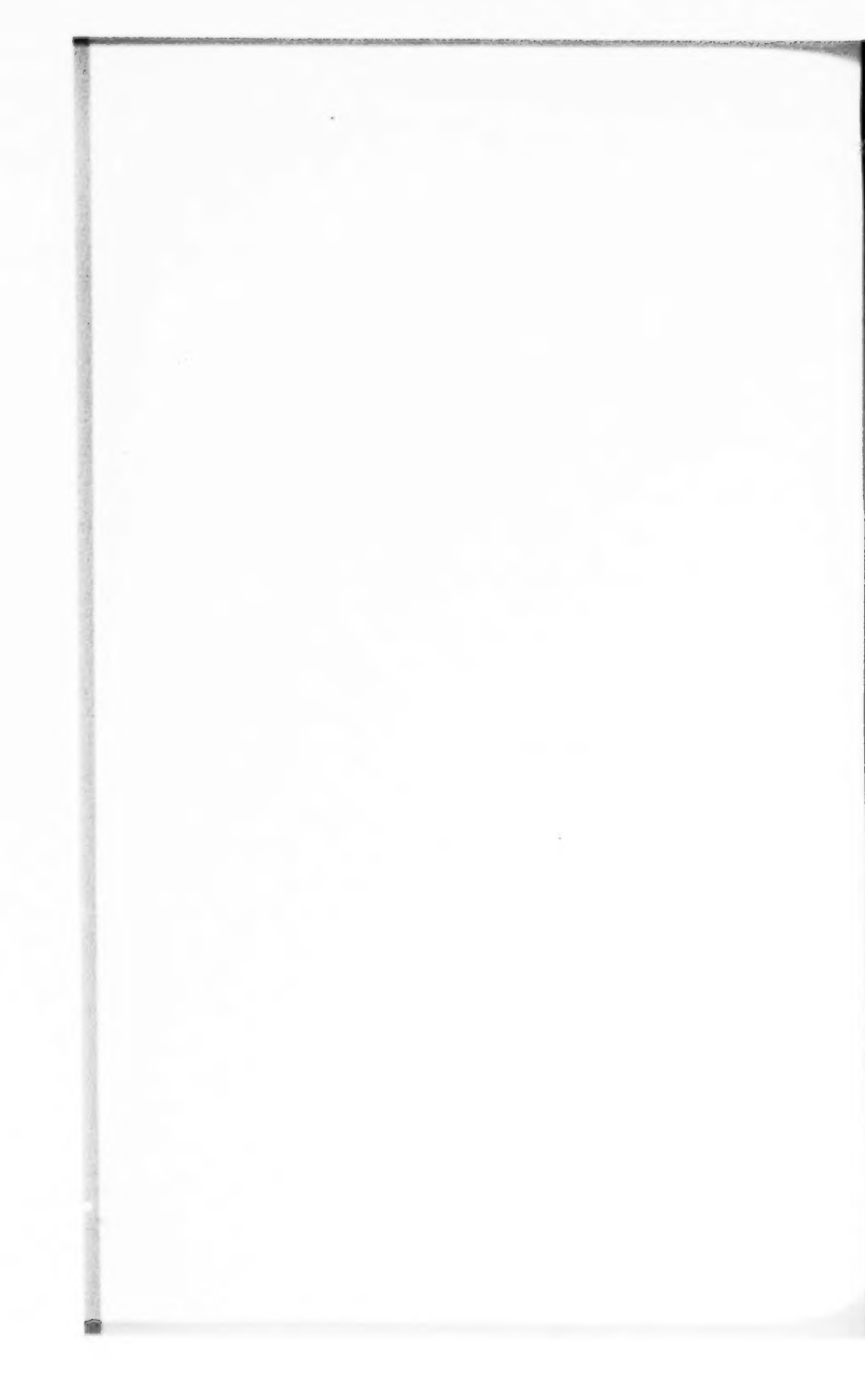
FRANK A. BONE, *Petitioner,*  
*vs.*  
COMMISSIONERS OF MARION COUNTY, *Respondent.*

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES  
CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

PETITION FOR WRIT OF CERTIORARI  
and  
STATEMENT OF GROUNDS FOR THE ALLOWANCE  
OF THE WRIT.

CLARENCE E. MEHLHOPE,  
ARTHUR H. EWALD,  
COUNSEL FOR PETITIONER.

BARNARD & MILLER PRINT, CHICAGO.



IN THE  
SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, A. D. 1917.

---

---

FRANK A. BONE,	} No.
vs.	
COMMISSIONERS OF MARION COUNTY, Respondent.	

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES  
CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

---

---

PETITION FOR WRIT OF CERTIORARI  
and  
STATEMENT OF GROUNDS FOR THE ALLOWANCE  
OF THE WRIT.

---

*To the Honorable, the Chief Justice and Associate  
Justices, of the Supreme Court of the United  
States:*

Your petitioner, Frank A. Bone, of Cincinnati, Ohio, prays for a writ of *certiorari*, directed to the United States Circuit Court of Appeals for the Seventh Circuit, ordering that the records and exhibits in the case of *Frank A. Bone, appellant, v. Commissioners of Marion County, Appellee*, in said Court of Appeals, for infringement of patent, be certified

to this honorable court for final review and determination.

#### **GROUND'S OF THE PETITION.**

This petition is based upon the fact that the Court of Appeals for the Seventh Circuit and the Court of Appeals for the Sixth Circuit, have decided directly contrary to each other upon the same claims of the same patent, in suits in which were presented substantially the same defenses and the same arguments.

The Court of Appeals for the Seventh Circuit, while not in so many words, in effect, held the patent invalid.\*

The Court of Appeals for the Sixth Circuit, in an earlier suit (decided March 2, 1915), held the patent valid. The claims of the patent involved in the case in the Seventh Circuit, were in issue in the case in the Sixth Circuit.†

#### **PRESENT LITIGATION.**

Your petitioner, Frank A. Bone, is an engineer and contractor and is the patentee and owner of United States Letters Patent No. 705,732, issued to him July 29, 1902, upon an application filed April 21, 1899. (R. 178.)

Your petitioner makes plans and estimates of cost for, and builds retaining walls, under his aforesaid patent, and in addition (and herein lies his greatest source of income from his patent) he licenses others, upon the payment of a long well known and recognized royalty, to build or erect re-enforced concrete retaining walls made under and in accordance with his patent.

\*See Appendix, page 13.

†See Appendix, page 20.



The respondent, the Commissioners of Marion County (in Indiana) erected and built, for said county, certain walls in infringement of the patent.

The case was started in the United States Court for the District of Indiana, and resulted in an oral opinion by Judge Anderson, in effect holding the patent invalid. His decree simply dismissed the bill for "want of equity." (R. 165-170.)

Upon appeal to the Circuit Court of Appeals for the Seventh Circuit, Judge Anderson's opinion was *affirmed*. (Rec., 283.) A petition for rehearing was denied. (Rec., 289.)

#### ANTECEDENT LITIGATION.

The first case in which your petitioner's patent was involved, was brought against the City of Akron in the Northern District of Ohio, Eastern Division. This resulted in an opinion by the Honorable William L. Day, and a decree holding the patent to be valid and infringed. (Rec., 111.)

An appeal was taken from this decree to the Sixth Circuit Court of Appeals, with the result that that court (Judge Dennison announcing the opinion) affirmed Judge Day, holding your petitioner's patent valid and infringed. (*City of Akron, Appellant, v. Frank A. Bone, Appellee*, 221 Fed. 994; Rec., 113.)

#### THE BONE PATENT.

The Bone patent relates to a reinforced concrete retaining wall. A retaining wall is a "wall to prevent the material of an embankment or cut from sliding" (Standard Dict.) and is used extensively in

connection with railroad cuts, embankments adjacent bridge abutments, embankments along canals and rivers and in numerous other instances.

Prior to Bone's patent, what is known as a *gravity* wall was in general use. A *gravity* wall, by its weight and mass alone, maintains its erect position and holds up the retained embankment. In the Bone wall, the weight and mass of material in the wall is greatly reduced and its cross-section (an inverted T) is such that the retained material acts to hold the wall erect.

The patent, since the case against the City of Akron, and until this present litigation, has been generally recognized by the public, except in some instances, where litigation was necessarily started, but was settled out of court before it came to hearing. A notable exception to this occurred in Denver, Colorado, where a case entitled *Bone v. The City and County of Denver* (U. S. Dist. Court of Colorado), was brought to final hearing and decided in your petitioner's favor by Judge Trieber.

Bone was a pioneer in the art, and the construction shown in his patent has gone into extensive use all over the country and has heretofore been erected by contractors who have paid your petitioner large royalties.

Your petitioner, Bone, was the first to replace the prior expensive and bulky, gravity retaining walls by the cheaper, reinforced concrete retaining walls of the present day. His efforts in introducing his wall, scoffed at in the beginning by engineers and others skilled in the art, have resulted in the saving

of thousands of dollars in cost of material and cost of labor in the erection of retaining walls throughout the country.

The value of Bone's wall and its advantages to the public at large, have never been questioned. Likewise, no one has ever questioned that he was a pioneer *in this country* in first building his type of wall.

The sole charge against him and against his wall, and that, first successfully maintained in this case, is that he is not an inventor and that his wall does not amount to a patentable invention.

Large interests of your petitioner depend upon the outcome of this suit. After the Sixth Circuit Court of Appeals decision, and even prior thereto, your petitioner was able with little difficulty, to collect royalties from all who built walls from plans submitted by himself, or under plans made by others but coming within the scope of his patent. Since the decision of the Seventh Circuit Court of Appeals, however, *in effect denying the validity of the patent*, your petitioner has been compelled to forego all royalties and all collections from those building walls under his patent.

The position of your petitioner is readily realized, when it is remembered that in the states included in the Seventh Circuit, his patent is in effect *invalid*; in the states of the Sixth Circuit, his patent is *valid*; in the State of Colorado his patent is *valid*; and in the other states of the Union outside of the states embraced in these two circuits, and the State of Colorado, his patent is in an *anomalous* position, in that it may or may not be valid.

Under such circumstances, your petitioner will lose the benefit of the payment of many royalties under his patent which he otherwise would have obtained, had it not been for the decision in this Seventh Circuit Court of Appeals, which is erroneous and should be corrected.

#### DECISION OF THE SEVENTH CIRCUIT COURT OF APPEALS.

The decision of the Seventh Circuit Court of Appeals is not only error, but in addition, in the terms as it is set forth, it is absolutely unfair to the patentee.

*The decision does not in so many words say that the patent is invalid. The last part of the decision states that "with the claims restricted to a matter of location of the reinforcement (the validity of which we need not decide), there is no infringement." It is but necessary to examine the two cuts on page 3 of the opinion (Rec., 285), under one of which appears "Bone 1899," and under the other of which appears "Marion County," to see the weakness of this position taken by the said court. These two views represent vertical cross sections, the one of the wall of the patent, and the other of the infringing wall. It is to be understood that the two walls are placed in reversed position. Thus the retained earth in the Bone wall is on the right hand side. The retained earth in the case of the Marion County wall is placed on the left hand side. If the two cuts are superimposed, the one upon the other, with the earth side in the same direction, it will be manifest that the "location of the reinforcement" is absolutely and essentially the same in both cases.*

The "*location of the reinforcement*" in the infringing wall in the Seventh Circuit, was, if anything, more nearly identical with that shown in the Bone patent than was the "*location of the reinforcement*" in the infringing wall in the Akron case. This part of the court's opinion is manifestly unintelligible.

Nothing is clearer than that the court was led to its erroneous conclusion by the *composite picture* of the alleged prior art gained by an examination of illustrations in prior publications submitted by the respondent and reproduced in close juxtaposition by the court in its opinion. These views are entitled respectively "*Bauzeitung 1894,*" "*Planat 1896,*" "*Stowell & Cunningham 1897,*" "*Rehbein 1894,*" "*Planat 1894*" and "*Nolthenius 1895.*" (Rec., 285.)

Only one of these structures is disclosed in a patent, and that, the Stowell & Cunningham patent of 1897. *This patent is not even addressed to a structure of the kind in issue. It is a metal wall.* It is absolutely not, and it is not even claimed by the patentees to be, a reinforced concrete wall. The concrete or other substance surrounding the metal has nothing more to do with the wall than paint or other substance placed upon the metal to keep it from rusting and wearing away under the action of the elements. In addition, it represents a well recognized different type of wall from that of the Bone patent.

It was upon this patent (Stowell & Cunningham 1897) that the lower court (Judge Anderson) based his decision denying the validity of the Bone patent. The other cuts alleged to represent the prior art in

the opinion of the Court of Appeals of the Seventh Circuit, in no way appealed to the court below, as appears from his memorandum decision.

The lower court misunderstood the decision and art that was in the Court of Appeals of the Sixth Circuit. That court quoted from the opinion of the Sixth Circuit Court of Appeals as follows:

"If the prior art had shown a structure intended for a retaining wall and having a heel such that the weight of earth thereon would tend to keep the wall erect, it might be difficult to find invention in merely adding the form of reinforcement most suitable to create the desired tensile strength. But we find no such earlier structure."

The Court of Appeals for the Seventh Circuit bases on this statement from the opinion of the other court, their conclusion, "an examination of the decision in that case shows that evidence of the prior art was not introduced, otherwise this conclusion would have been reached." How this court could have come to any such conclusion, it is impossible to understand, in view of the fact that in the record in the Sixth Circuit Court of Appeals there was abundance of prior art.

In particular there was a metal wall shown in a prior British patent (Huebner patent, Rec., 239-241), which was almost identical with the United States Stowell & Cunningham patent of 1897 (*supra*), upon which Judge Anderson based his decision. The remarks in Judge Anderson's oral opinion quoted in the decision of the Circuit Court of Appeals of the Seventh Circuit, are inconceivable in view of the fact that the very patent upon which he based his deci-

sion showed a structure identical with one (Huebner) held by the Court of Appeals of the Sixth Circuit, to be of no value as an anticipation; notwithstanding it showed as set forth in its specification, "a retaining wall \* \* \* having a heel such that the weight of the earth thereon would tend to keep the wall erect."

Some prior foreign *publications* appear in the record in the Seventh Circuit, which were not the same as those presented in the Sixth Circuit Court. However, some of them were manifestly presented in the Sixth Circuit on an application for rehearing. This was probably the Rehbein 1894, referred to by the Seventh Circuit Court of Appeals when denying a rehearing. On the application for rehearing in the Sixth Circuit there appears the following (221 Fed. 947):

"We are asked to direct the court below to open the case to permit the defendant to put in proofs regarding a German publication of 1894 \* \* \*. While the new reference (if it passes the limits of mere suggestion or unsuccessful experiment) would be distinctly pertinent upon the issue of invention, and if properly proved in another case should receive careful consideration, it is not so demonstrative of error in the result already reached as to require its reception."

The other prior publication referred to by the Court of Appeals of the Seventh Circuit are of no more value than this publication referred to in the Sixth Circuit Court of Appeals. Those publications especially relied upon by the respondent in this case are the Planat 1896 and Planat 1894. They are merely experimental, theoretical, suggestive sketches made in connection with theoretical discussions and

theses by an engineer in a magazine. But of these, as of the Rehbein 1894 submitted to the Court of Appeals for the Sixth Circuit, *there is nothing to show in the record that they "passed the limits of suggestion or unsuccessful experiment."*

#### CONCLUSION.

The Court of Appeals for the Seventh Circuit, without doubt, failed to grasp the invention in the Bone patent. *It failed to realize that Bone, the workman and producer, had given to the art what his predecessors had merely theorized about and had discussed. Bone was the first to practically advance his art. He gave to the public something that it had never had before.*

The Court of Appeals for the Seventh Circuit was manifestly misled by the present general knowledge of the subject matter of Bone's patent. The Court of Appeals for the Sixth Circuit was not so misled. It said in its decision:

*"In the present more or less familiar state of the reinforced concrete art, the impression is natural that there cannot be patentability in the structure of these claims; but the patent was issued upon an application filed in 1899 which was a renewal of an application in 1898, and Mr. Bone's idea is shown to have antedated his application. We are thus carried back nearly twenty years."*

The twenty years referred to at the time of this decision in the Akron case, is now increased to nearly a quarter of a century.

The Court of Appeals for the Sixth Circuit was undoubtedly correct in its decision and the Court of



Appeals for the Seventh was in error. It is therefore necessary for this court to review the decision of the Seventh Circuit Court of Appeals in order—

First: *To do justice between the parties in this case;*

Second: *To hold to your petitioner, rights granted him under his patent, which will be inevitably lost unless this petition is allowed; and*

Third: *To determine finally for the benefit of the public at large and throughout the United States, the question of the validity of the Bone patent and thus prevent useless litigation.*

It is respectfully submitted that the petition should be granted.

FRANK A. BONE.

CLARENCE E. MEHLHOPE,

ARTHUR H. EWALD,

*Counsel for Petitioner.*



## APPENDIX.

## OPINION.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS.

For the Seventh Circuit.

No. 2459.

October Term and Session, 1917.

Frank A. Bone, <i>Plaintiff and Appellant,</i> <i>vs.</i> Commissioners of Marion County, <i>Defendant and Appellee.</i>	}	Appeal from the Dis- trict Court of the United States for the District of Indiana.
---	---	---

Alschuler and Evans, Circuit Judges, and Landis,  
 District Judge.

Appeal from decree dismissing bill brought to  
 enjoin infringement of patent.

Evans, C. J.—Plaintiff sought damages, and an  
 injunction to prevent future infringement of patent  
 No. 705,732, issued July 29, 1902, upon application  
 filed April 22, 1899. The bill was dismissed upon  
 a finding of no infringement.

The patent under consideration relates to a retain-  
 ing wall of the cantilever type, and is described by  
 the patentee as follows:

“My invention relates to improvements in re-  
 taining walls for abutments of bridges, seawalls,  
 banks of streams, embankments, cuts, dams,  
 dry-docks, and such places as it is desired to  
 retain earth or other matter permanently in  
 place with its face at an angle nearer vertical  
 than it would naturally repose when exposed to  
 the action of the elements or gravity. \* \* \*

"The said invention consists principally of introducing into masonry of concrete, stone, or brick a framework of steel or iron in such a way that the whole wall is so much strengthened thereby that the volume of the masonry may be greatly reduced, and yet the height, base and strength against overturning, bulging or settling will still be ample."

Again he says:

"I am aware that retaining walls have been constructed of concrete and steel, but none to my knowledge (1) have been supported on their own base as mine, (2) nor have any of them entirely enclosed the steel within the concrete, (3) nor have any of them used the weight of the material retained as a force to retain itself."

Claims 1, 3, 5, 16 and 17 are involved in the present suit. Claims 1 and 16, which are typical, read as follows:

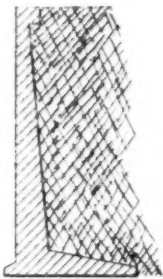
"1. The combination with a retaining wall having a heel, of a metal structure embedded vertically in said wall and obliquely in said heel, so that the weight of the retained material upon the heel of the metal structure will operate to retain the wall in vertical position."

"16. The combination with a retaining wall having a heel and a toe at opposite sides thereof, said toe having an independent metal structure embedded therein, of a metal structure embedded within said wall and heel, said structure consisting of upright bents at the back part of the vertical wall and continuing down along the upper part of the heel of said wall to the back part thereof, so that the weight of the retained material upon the heel of the metal structure will operate to maintain the wall in a vertical position."

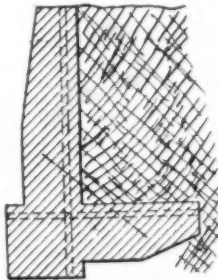
Defendant maintains: (a) that the patent is an-

anticipated by the prior art; (b) if not so anticipated, the claims must be so restricted and construed as to support the finding made by the trial judge that there was no infringement.

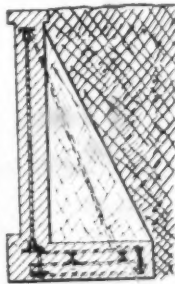
The following drawings represent the plaintiff's wall, defendant's wall, and the prior art:



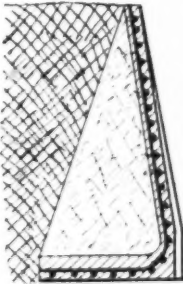
BAUZEITING-1894



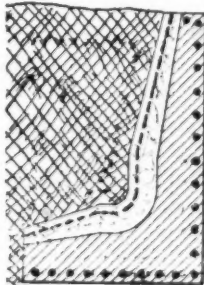
PLANAT-1896



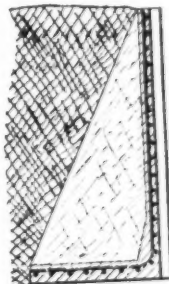
STONELL &amp; CUNNINGHAM-1897



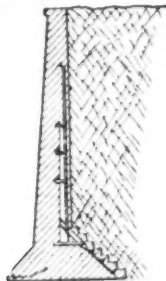
REHBEIN-1894



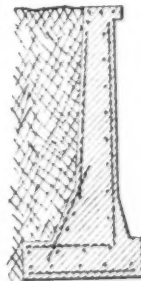
PLANAT-1894



NOLTHENIUS 1895



BONE-1899



MADISON COUNTY

These figures admirably picture the state of the prior art.

As early as 1869, a patent was issued to Francois Coignet, No. 88457, covering the principle of reinforced concrete which was for the avowed purpose of "giving greater cohesive strength," so that "the walls or size of the articles may be considerably reduced." From that date to the date of the application for a patent by Bone, various retaining walls have been designed and constructed. The Bauzeitung wall appearing in 1894, was of the cantilever type, with the heel and toe feature found in the Bone patent.

Two articles written by Planat appeared in the scientific magazine "La Construction Moderne," a Paris publication, in 1894 and 1896. Both deal with retaining walls of reinforced concrete of the cantilever type. We quote from the article appearing in 1896:

"These computations suppose that one has effectively realized the fixing of the vertical wall to the horizontal slab at their junction. This fixing requires special precautions. The bars at the point of junction exert a pulling force, which tends to pull them out of the concrete. \* \* \* But here we have only a half beam on a cantilever span. It is necessary that the extremities of the bars in the region of fixation should be held in a sufficient mass of concrete or maintained by some other means.

"One is able to reduce these projections in a very large measure if one takes care to bind together the vertical bars and the horizontal bars at their point of intersection. In this way the pull of the bar is carried not only on its prolongation, arranged for anchorage, but also on the bar which is perpendicular to it and whose

great length permits it to offer a large resistance to the force tending to pull it out transversely."

On July 25, 1899, upon application filed March 25, 1897, a patent, No. 629,477, was issued to Stowell & Cunningham, covering a retaining wall illustrated above. Further reference to the prior art seems hardly necessary.

Planat, as well as Bauzeitung, and Stowell & Cunningham each disclosed a wall with a heel in the base, while the toe appears in at least four previous types illustrated by the drawings. It likewise clearly appears that the entire enclosure of steel by the concrete was not original with Bone.

If there be any patentable novelty disclosed by Bone's wall, it is by reason of the location of the reinforcement. In fact this seemed to be the patentee's own idea of the novelty, for he says:

"The said invention consists *principally* of introducing into masonry of concrete, \* \* \* a framework of steel or iron *in such way that the whole wall* is so much strengthened thereby that the volume of the masonry may be greatly reduced and yet the \* \* \* strength \* \* \* will still be ample."

It is not necessary to decide whether the location of the reinforcement in the concrete in order to give greater strength in 1899 evidenced patentable novelty when applied to retaining walls, for if the claims in this patent are so restricted and limited, it is obvious that defendant's wall did not infringe in this respect.

Our attention is called to the fact that this patent was sustained in the case of *Bone v. City of Akron*,

221 Fed. 944. An examination of the decision in that case shows that evidence of the prior art was not introduced, otherwise a different conclusion would have been reached. The court said:

"If the prior art had shown a structure intended for a retaining wall, and having a heel such that the weight of the earth thereon would tend to keep the wall erect, it might be difficult to find invention in merely adding the form of reinforcement most suitable to create the desired tensile strength; but we find no such earlier structure. Those which have that shape are sustaining walls only, and were so obviously unfit for use as retaining walls that no one seems to have seen the utility for the purpose, of which the form, when properly adapted and strengthened, was capable."

The learned district judge who tried this case in the court below aptly distinguished the facts in the present case from those disclosed in the opinion above quoted. He said:

"So the court did not have before it the evidence either on the petition for rehearing or on the original hearing, that this court has, on the state of the prior art."

"He (Bone) was not the first person to reinforce a retaining wall; he was not the first person to conceive the idea of reinforced retaining wall which was so shaped and constructed that the weight of the earth on the heel of the wall would withstand the pressure of the dirt or the earth on the wall. He was not the first to do it. \* \* \* Now it may be that on the record before Judge Day, Bone was the first person to do that. So far as the record in this case is concerned, the absolute converse of that proposition has been demonstrated."

With the claims restricted to a matter of location



of the reinforcement (the validity of which we need not decide), there is no infringement.

The decree is

Affirmed.

A true Copy.

Teste:

.....  
*Clerk of the United States Circuit  
Court of Appeals for the Sev-  
enth Circuit.*

## OPINION.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS.

Sixth Circuit.

No. 2562.

The City of Akron,	} Appeal from the Dist.	
<i>Appellant,</i>		
<i>vs.</i>		
Frank A. Bone,	} Court of the U. S. for	
<i>Appellee.</i>		Northern District of
		Ohio, Eastern Division,

Submitted Feb. 10, 1915. Decided March 2, 1915.  
 Before Warrington, Knappen and Dennison, Circuit  
 Judges. Dennison, Circuit Judge:

The City of Akron appeals from the usual interlocutory decree of infringement against it, based upon patent No. 705,732 of July 29, 1902, issued to Frank A. Bone, for a reinforced concrete retaining wall. It consists of a comparatively thin vertical wall, broadening at the base into a heel and toe. The heel extends back a considerable distance underneath the earth-bank to be retained, and, accordingly, so long as the entire wall structure remains unitary, the weight of the earth bank resting on the heel, operates to prevent the wall from tipping over forward, and thus, the same body which exerts a horizontal forward pressure, especially on the upper part of the wall, is caused to resist that pressure by its own weight. To prevent breaking of the wall by lateral strain, Bone provided continuous reinforcing in a vertical plane, extending up and down the wall

and obliquely in the heel. This gave tensile strength and adapted it to resist the greatest strain. A preferred form is described in the third claim as follows:

“The combination of a retaining wall having an inclined heel of a metal structure embedded within said wall and heel, consisting of upright bents at the back part of the vertical wall and continuing down along the upper part of the heel of said wall to the back part thereof, in such a manner that the weight of the retained material upon the heel of the metal structure will operate to maintain the wall in vertical position.”

The claims in suit are Nos. 1, 2, 3, 5, 16 and 17.

In the present more or less familiar state of the reenforced concrete art, the impression is natural that there cannot be patentability in the structure of these claims; but the patent was issued upon an application filed in 1899, which was a renewal of an application in 1898, and Mr. Bone's idea is shown to have antedated his application. We are thus carried back nearly twenty years. The record discloses nothing anticipating the substantial thought of the patent. Masonry or concrete retaining walls were deep and heavy and maintained by gravity in their resistance against a horizontal stress. There was no occasion for reenforcement. Sustaining walls had been built of concrete with vertical reenforcement, but they were maintained against side strain by cross-ties, or beams, without which they might tip over. If the prior art had shown a structure intended for a retaining wall, and having a heel such that the weight of the earth thereon would tend to keep the wall erect, it might be difficult to find inven-

tion in merely adding the form of reenforcement most suitable to create the desired tensile strength; but we find no such earlier structures. Those which have that shape are sustaining walls only, and were so obviously unfit for use as retaining walls that no one seems to have seen the utility for that purpose, of which the form, when properly adapted and strengthened, was capable. There is also a prior wall, wholly of metal, fairly disclosing a unitary heel adapted to hold the wall erect; but to see that this could become merely a skeleton imbedded in concrete, may well have required, in 1898, more than ordinary vision. Upon the whole, we think invention was involved and the claims are valid. (*Expanded Metal Co. v. Bradford*, 214 U. S. 366, 381; *Concrete Co. v. Ferro Co.*, C. C. A. 6, 206 Fed. 666; and see our comments in *Faultless Co. v. Star Co.*, 202 Fed. 927,—upon the Rubber Tire Case [220 U. S. 428] in which the opinion of this court in 116 Fed. 303, was disapproved.)

They cannot be limited to the form of "metal structure" shown in the drawing, with the view which we have indicated as to what the patentee accomplished, the claims do not require that limitation, and it cannot be given to them and preserve the distinctions between these claims and some of those not sued upon.

Infringement is clear enough. The city advertised for bids for a retaining wall, and furnished two sets of specifications, one of which was marked as embodying the "Bone Patent" system, and which plainly did embody the use of these claims, and the other of which was upon the gravity plan. The con-

tract was let on the former specifications, and the wall was constructed thereunder. The only thing which throws doubt on the *prima facie* case of infringement thus made out is the testimony that the specifications were departed from in some particulars; but, if this departure was material, the burden was upon the city to show its extent, and this the city did not do.

It is said that the Ohio laws forbid a city to let a contract which involves the use of a patent, excepting upon conditions which were not followed here (*Hastings v. Columbus*, 42 O. St. 585), and that, accordingly, the agents of the city are personally liable and the city is exempt. We cannot accept this conclusion. The action of infringement rests on tort, not on contract, and the position of the defendant seems to be that a city is not liable for a tort, unless the tort is lawfully committed. Such a description of a tort is difficult to apply. To deny an infringement injunction against a city is to say that because the city has wrongfully taken plaintiff's property it may continue to keep it and use it. The liability of a municipal corporation for infringement has been recognized in this court (*Warren v. Owosso*, 166 Fed. 309; *Grand Rapids v. Warren*, 196 Fed. 892) as well as by the Supreme Court (*Elizabeth v. Pavement Co.*, 97 U. S. 126) and expressly upheld (*May v. Logan Co.*, Jackson, C. J., 30 Fed. 250).

Under the familiar rules concerning torts by agents of municipalities, it would seem that if the agents in adopting the infringement went outside the scope of their duty, and if the city itself did not continue the infringement after notice of what the

agents had done, there might be no liability for damages; but this is not the case. The municipal officers who built this wall had clear authority to obtain the use of the patent, by following a prescribed method. In appropriating the patent without permission, they were acting within the scope of their duties though in violation of specific restrictions, and the city is liable in damages for their tort.

The decree is affirmed, with costs.

#### ON APPLICATION FOR REHEARING.

PER CURIAM. We are asked to direct the court below to open the case to permit the defendant to put in proof regarding a German publication of 1894. No satisfactory excuse is offered for not producing this proof in due time, and the defendant—which infringed, not ignorantly, or on advice of counsel, but under circumstances indicating a deliberate appropriation of the invention without claim of right—is in no position to ask extraordinary leniency. There may well be cases where, even under such conditions, the new proof makes the court's error so clear that the case should be reopened; but this is not such a case. While the new reference (if it passed the limits of mere suggestion or unsuccessful experiment) would be distinctly pertinent upon the issue of invention, and if properly proved in another case should receive careful consideration, it is not so demonstrative of error in the result already reached as to require its reception.

The motion for rehearing has been considered also in its other aspects, and is denied. (221 Fed. 947.)

IN THE SUPREME COURT OF THE UNITED STATES, Oc-  
TOBER TERM, A. D. 1917.

Frank A. Bone,	} No.
<i>Petitioner,</i>	
<i>vs.</i>	
Commissioners of Marion	
County,	
<i>Respondent.</i>	

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED  
STATES CIRCUIT COURT OF APPEALS FOR THE SEV-  
ENTH CIRCUIT.

NOTICE.

*V. H. Lockwood,*  
*Solicitor and Counsel for*  
*Commissioners of Marion County, Respondent,*  
*Lemcke Bldg., Indianapolis, Ind.*

SIR:

Please take notice that on Monday, the 4th day of March, 1918, at the opening of court, or as soon thereafter as counsel may be heard, I shall be and appear in the Supreme Court of the United States, at Washington, D. C., and shall ask leave to present a petition for writ of *certiorari* and statement of grounds in support of said petition, copies of which are herewith handed to you.

CLARENCE E. MEHLHOPE,  
*Counsel for Frank A. Bone, Petitioner.*

Chicago, February 16, 1918.





No. 8 3

FILED  
MAR 4 1918

WES D. WALKER,  
CLERK.

IN THE

# Supreme Court of the United States

OCTOBER TERM, A. D., 1917.

---

FRANK A. BONE,

*Petitioner,*

*vs.*

COMMISSIONERS OF MARION COUNTY,

*Respondents.*

No.

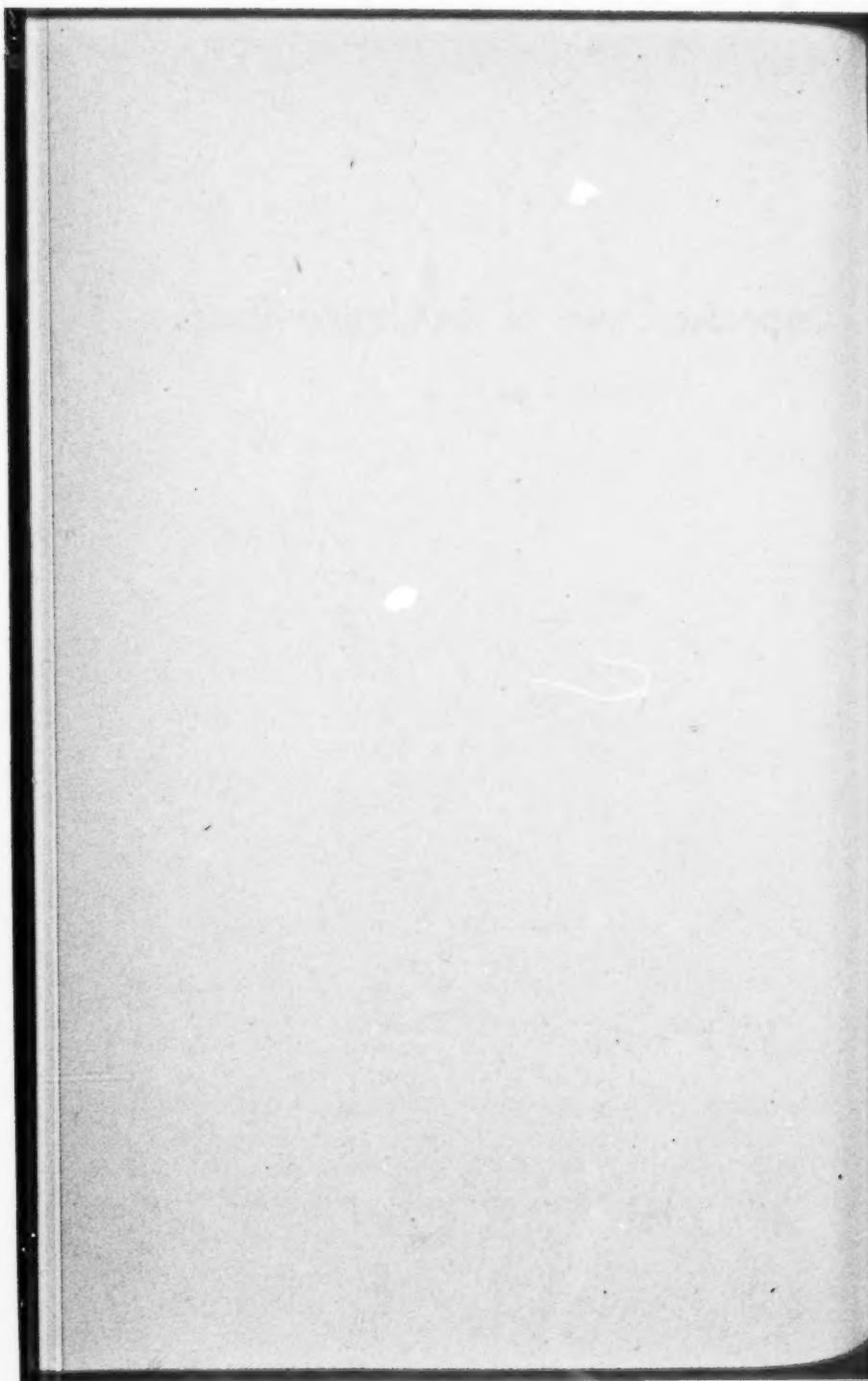
---

ON PETITION FOR WRIT OF CERTIORARI TO THE  
UNITED STATES CIRCUIT COURT OF APPEALS  
FOR THE SEVENTH CIRCUIT.

---

AGAINST PETITION FOR WRIT OF CERTIORARI

---



IN THE

# Supreme Court of the United States

OCTOBER TERM, A. D., 1917.

---

---

FRANK A. BONE,	} <i>Petitioner,</i>	} No.
<i>vs.</i>		
COMMISSIONERS OF MARION COUNTY,	} <i>Respondents.</i>	

---

---

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED  
STATES CIRCUIT COURT OF APPEALS FOR THE  
SEVENTH CIRCUIT.

---

---

## AGAINST PETITION FOR WRIT OF CERTIORARI

The statement of grounds for the allowance of the writ is not accurate and the respondents respectfully ask permission for a brief reply to said statement.

1. As grounds for the petition, on page 2 thereof, the petitioner states that the Courts of Appeals for the Sixth and Seventh Circuits "decided directly contrary to each other \* \* \* in suits in which were presented substantially the same defenses and the same arguments."

This is not correct. The two courts had before them the same claims of the same patent, but in the Seventh Circuit, the court had and decided the case upon *newly discovered evidence* not before the court in the Sixth Circuit, namely, the disclosures in the following publications: Bauzeitung, 1894; Rehbein, 1894; Planat, 1894; Nolthenius, 1895; Planat, 1896, and the Stowell & Cunningham patent, 1897.

2. The decision of the court in the Seventh Circuit is "not directly contrary," or at all in conflict, with the decision of the court in the Sixth Circuit, but is in actual pursuance of and in accordance with the decision of the Sixth Circuit Court of Appeals. This latter court pointedly held (p. 21 of Petition):

"If the prior art had shown a structure intended for a retaining wall, and having a heel such that the weight of the earth thereon would tend to keep the wall erect, it might be difficult to find invention in merely adding the form of re-enforcement most suitable to create the desired tensile strength; but we find no such earlier structures."

There were no such structures in the art before the Sixth Circuit Court of Appeals. But there was such earlier structure disclosed in each of the six newly discovered publications which were before the Seventh Circuit Courts and it was so held by the district judge as well as the Court of Appeals for the Seventh Circuit. In other words, the courts in the Seventh Circuit based their decisions on and followed the decision of the Sixth Circuit Court of Appeals. There is absolute harmony, therefore, instead of conflict between these courts. Judge Trieber in the Denver case (p. 4 of the Petition) had before him the same prior art relied upon in the case before the Sixth Cir-

cuit Court of Appeals, and he followed the decision of that court very properly. He did not have before him the six newly discovered instances of prior art above mentioned and which were before the courts in the Seventh Circuit.

3. On page 4 of the Petition, the alleged invention of Bone, distinguishing it from the prior art, is stated as follows:

"In the Bone wall, the weight and mass of material in the wall is greatly reduced and its cross-section (an inverted T) is such that the retained material acts to hold the wall erect."

Each of the newly discovered instances in the prior art above referred to and for the first time before the courts of the Seventh Circuit, shows at a glance the characteristic of the Bone wall above specified. Bone thought that was his invention and so stated in his patent and in the broad claims in issue and the Sixth Circuit Court of Appeals so held in view of the prior art before it, but the newly discovered prior art considered by the courts in the Seventh Circuit shows clearly that Bone and the prior courts were in error. Therefore, the statement in the Petition that Bone was a pioneer in the art is error. It is false to call a wall maintained erect by the retained material, Bone's wall, for it is not his wall.

4. On page 7 of the Petition it is stated that Judge Anderson of the lower court, based his decision denying the validity of the Bone patent, upon the Stowell and Cunningham 1897 patent. The Petition says on page 3, near the top, that in his decree that Judge Anderson "simply dismissed the bill for want of equity." At the trial he did say that the Stowell & Cunningham patent met the broad claims in the Bone patent, but he did not base his decision on that alone, as he said that the other newly discovered

instances in the prior art met the broad claims of the Bone patent also.

5. On page 8 of the Petition, it is stated that it is impossible to understand how the Seventh Circuit Court of Appeals came to the conclusion that "evidence of the prior art was not introduced" before the Sixth Circuit Court of Appeals, "whereas there was an abundance of prior art" in the record of the Sixth Circuit Court of Appeals. What the Seventh Circuit Court of Appeals means is that an examination of the decision of the Sixth Circuit Court of Appeals shows that the newly discovered evidence of the prior art above referred to was not introduced; and it was not, as held both by the district court and the Court of Appeals for the Seventh Circuit.

6. The reinforcing frame or structure disclosed in the Bone patent may or may not be a patentable invention, but the defendants' wall does not contain any such structure as they merely placed independent rods into the concrete wall as it was being constructed, wherever it was thought by the workmen that the concrete would need reinforcement. The reinforcing frame of Bone was not employed. The Sixth Circuit Court of Appeals says that "it might be difficult to find invention" in the mere form of reinforcement disclosed by Bone, but that is immaterial in our case for the defendants did not use it, as the Seventh Circuit Court of Appeals held at the end of its decision, and which is evidently correct. The court was not required to pass upon the question of patentability of Bone's special reinforcement. Therefore, the holding of the Seventh Circuit Court of Appeals is that the broad claims sued upon are invalid unless they are construed to mean the particular reinforcement disclosed by Bone and, thus construed, those claims are not infringed, whether they are valid or not. It is all perfectly clear and correct.

7. The question raised on page 10 of the Petition about Bone's predecessors in the art having merely theorized about this type of retaining wall, was fully presented, considered and decided by the courts in the Seventh Circuit and they felt that under the patent statute, Sec. 4886, a disclosure of an alleged invention in a prior publication made any subsequent claim by another to that invention unpatentable. Whether they were theorizing about it in the prior art or not is immaterial, if they *disclosed* the invention, as that is all the statute calls for. There is no evidence in the case that the walls disclosed in the newly discovered prior publications were not made in great abundance. So there is no authority for granting Bone a patent on what was disclosed in prior publications and which he did not invent.

Therefore, there is absolutely no conflict between the courts in their decisions about this patent, and so far as the wide-spread public use of and interest in the invention is concerned, it is in no different situation from many other inventions. Most inventions are used all over the United States.

It is respectfully submitted that the writ should be denied as there is no good reason why the case should be taken and reconsidered by the Supreme Court.

V. H. LOCKWOOD,  
*Counsel for Defendants.*





No. **63**

Office Supreme Court, U. S.  
FILED

MAR 2 1918

JAMES D. MAHER,  
CLERK.

IN THE

# Supreme Court of the United States.

October Term, A. D. 1918.

FRANK A. BONE,

Petitioner,

vs.

COMMISSIONERS OF MARION COUNTY,

Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT  
OF APPEALS FOR THE SEVENTH CIRCUIT.

## BRIEF FOR PETITIONER.

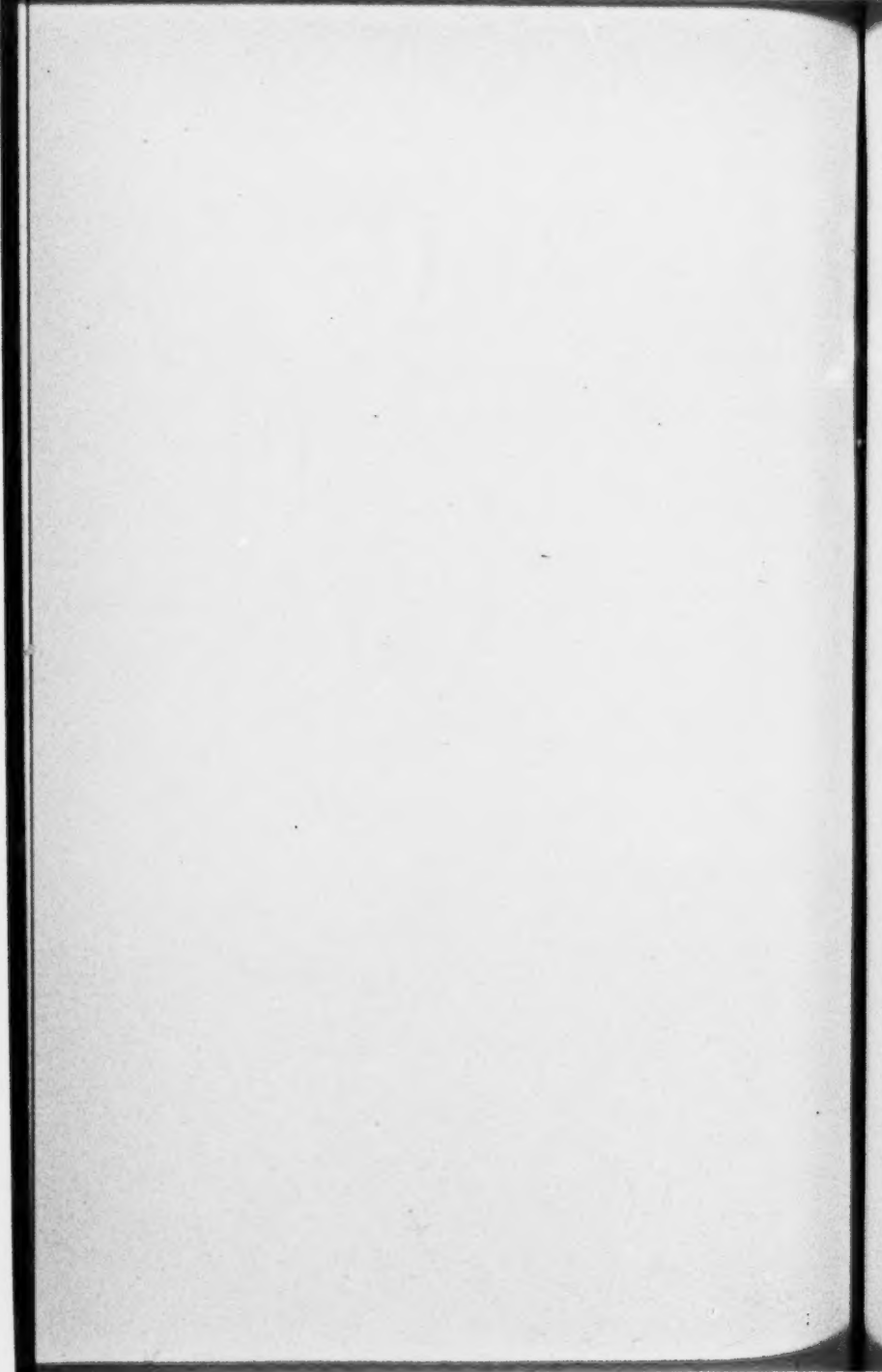
CLARENCE E. MEHLHOPE,

Attorney for Petitioner.

ARTHUR H. EWALD,

as Counsel.

PRINTED & BOUND BY THE COURT.



## SUBJECT MATTER INDEX.

---

	PAGE
Statement of the case.....	1
Present litigation .....	2
Antecedent litigation .....	3
The Bone wall.....	3
Argument .....	5
Foreword .....	5
The Art .....	8
Patent in suit.....	13
Prior patents and publications.....	14
Stowell & Cunningham patent.....	16
Planat publication, 1896.....	17
Infringement .....	20
Conclusion .....	21



IN THE  
SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, A. D. 1918.

---

---

FRANK A. BONE,	}	No. 371.
<i>Petitioner,</i>		
<i>vs.</i>		
COMMISSIONERS OF MARION COUNTY,	}	
<i>Respondents.</i>		

---

---

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT  
OF APPEALS FOR THE SEVENTH CIRCUIT.

---

BRIEF FOR PETITIONER.

---

STATEMENT OF THE CASE.

MAY IT PLEASE THE COURT:

This is a suit in equity by Frank A. Bone against the Commissioners of Marion County for the infringement of Letters Patent No. 705,732, granted to the petitioner July 29, 1902, upon an application filed by him April 1, 1899, for an improvement in retaining walls. The invention relates specifically to a novel retaining wall made of reinforced concrete, the wall being now known to engineers as a "cantilever" wall.

The patent covers a type of retaining wall that

has proven of untold value and saving to the public and has gone into almost universal use throughout the country. The patent has now but a few months to run (expiring July 29, 1919).

After its conception by the inventor Bone, in 1899, the invention was put into use by him almost immediately in a wall built at Black Lick, Ohio, in 1900. The public, and particularly the engineers, however, did not recognize the value of the invention until later, so that it was not until after the lapse of several years that the patented wall was accepted and began to come into more general use.

#### PRESENT LITIGATION.

The petitioner, Frank A. Bone, is an engineer and contractor. He makes plans and estimates of cost for, and builds retaining walls, under his aforesaid patent, and in addition (and herein lies his greatest source of income from his patent) he licenses others, upon the payment of a long well known and recognized royalty, to build or erect re-enforced concrete retaining walls made under and in accordance with his patent.

The respondent, the Commissioners of Marion County (in Indiana), erected and built, for said county, certain walls in infringement of the patent.

The case was started in the United States Court for the District of Indiana, and resulted in an oral opinion by Judge Anderson, in effect holding the patent invalid. His decree simply dismissed the bill for "want of equity." (R., 69.)

Upon appeal to the Circuit Court of Appeals for the Seventh Circuit, Judge Anderson's opinion was *affirmed*. (R., 109.)

## ANTECEDENT LITIGATION.

The first case in which the petitioner's patent was involved was brought against the City of Akron in the Northern District of Ohio, Eastern Division. This resulted in an opinion by the Honorable William L. Day, and a decree holding the patent to be valid and infringed. (R., 48.)

An appeal was taken from this decree to the Sixth Circuit Court of Appeals, with the result that that court (Judge Denison announcing the opinion) affirmed Judge Day, holding the patent valid and infringed. (*City of Akron, Appellant, v. Frank A. Bone, Appellee*, 221 Fed. 944; R. 48.)

## THE BONE WALL.

The Bone patent relates to a reinforced concrete retaining wall. A retaining wall is a "wall to prevent the material of an embankment or cut from sliding" (Standard Dict.) and is used extensively in connection with railroad cuts, embankments adjacent bridge abutments, embankments along canals and rivers and in numerous other instances.

Prior to Bone's patent, what is known as a *gravity* wall was in general use. A *gravity* wall, by its weight and mass alone, maintains its erect position and holds up the retained embankment. In the Bone wall, the weight and mass of material in the wall is greatly reduced and its cross-section (an inverted T) is such that the retained material acts to hold the wall erect.

The patent, since the case against the City of Akron, and until this present litigation, has been

generally recognized by the public, except in some instances, where litigation was necessarily started, but was settled out of court before it came to hearing. A notable exception to this occurred in Denver, Colorado, where a case entitled *Bone v. The City and County of Denver* (U. S. Dist. Court of Colorado), was brought to final hearing and decided in your petitioner's favor by Judge Trieber.

Bone was a pioneer in the art, and the construction shown in his patent has gone into extensive use all over the country and has heretofore been erected by contractors who have paid the petitioner large royalties.

Your petitioner, Bone, was the first to replace the *prior, expensive and bulky gravity retaining walls* by the *cheaper, reinforced concrete cantilever retaining walls of the present day*. His efforts in introducing his wall, scoffed at in the beginning by engineers and others skilled in the art, have resulted in the saving of thousands of dollars in cost of material and cost of labor in the erection of retaining walls throughout the country.

The value of Bone's wall and its advantages to the public at large have never been questioned. Likewise, no one has ever questioned that he was a pioneer *in this country* in first building his type of wall.

The sole charge against him and against his wall, and that, first successfully maintained in this case, is that he is not an inventor and that his wall does not amount to a patentable invention.



## ARGUMENT.

## FOREWORD.

The chief difficulty petitioner has in presenting this case to this court arises from the simplicity of the invention when viewed from an experience of 20 years.

It is so easy, after a patent has been issued and has gone into public use, for skilled mechanics and particularly for civil engineers to see in some prior patent, publication or discussion, a complete disclosure of the patented invention. On the other hand, *the court has equal difficulty in the case of an invention as old and as simple as this, to disabuse its mind of facts now long known, but either not known or not appreciated at the date when the invention was conceived.*

The invention was made more than 20 years ago. At that time its use or its suggestion would have been laughed at as impracticable by the very engineers who now so clearly understand it and say there was nothing novel in it at the time of its conception—who so clearly can pick out its essential features, in fact the invention in its entirety, from prior *unused suggestions.*

This, however, should not negative the patentable novelty of the invention.

There is no real prior art in this case, in the sense that that term is generally understood. The inventor, Bone, was a pioneer in the field. *Theoret-*

*ical suggestions, scientific discussions, proposed solutions and experimental reports appear in foreign publications made prior to the Bone invention. Bone, however, was the first to do the thing; the first to make and complete the invention, by reducing it to practice; the first to practically advance the art.*

The reinforcing of concrete walls, beams, floors and other structures, by means of a contained metal web or skeleton, is now so generally familiar that it is difficult to project the mind back to the more limited knowledge of a generation ago. *But this divestment by the court of its present knowledge must be had before it can properly determine and know the Bone invention.*

This fact was appreciated by the Court of Appeals of the Sixth Circuit, when it first sustained the patent—when it said (Judge Denison):

“In the present more or less familiar state of the reinforced concrete art, the impression is natural that there cannot be patentability in the structure of these claims; but the patent was issued upon an application filed in 1899, which was a renewal of an application filed in 1898, and Mr. Bone’s idea is shown to have antedated his application. We are thus carried back nearly 20 years.” (Note this decision was in 1915.)

While, as has been said, this patent has been largely recognized and respected by the public, the total amount of royalties collected (\$50,000), as appears in this record, is not large as such things are usually considered, in the case of a pioneer invention of the kind involved here. But the court must remember that this patent has not been backed by capital. It has been widely used, but not *widely exploited* for the benefit of the petitioner, the pat-

entee. The patentee, a simple engineer, has collected his royalties as he could, when he learned of infringements, spending a large part of his royalties in litigation to maintain his grant.

The invention is not such as may be made in quantities and then distributed from one or more centers. Each wall is built where it is used. The invention has had wide publicity through the petitioner's distribution of his catalogs and through periodical engineering publications which have described walls built—often without credit to the inventor. Any competent engineer, since the date of Bone's patent, has been able to design a retaining wall embodying the invention, and any contractor has been able to build it. Bone has had no way of keeping track of infringements except by keeping in touch with engineering publications and through reports of friendly engineers. But while the gross royalties have been meager, the percentage collected in each case (10 per cent.) has been large (as much as 30 per cent. was collected in the Akron case, Sixth Circuit), thus indicating the value of the invention.

The court will therefore find in this case an absence of evidence showing great and annually increasing sales, which would ordinarily be found in the case of an invention of the epoch-making kind involved herein. This because there has been no large capital, no great enterprise and efficient management to back and push the invention. The inventor has stood on his own small means and the *merit of his invention alone has enabled him to get any return on his patent.*

## THE ART.

*Retaining and Sustaining Walls.*—The significance of Bone's invention and its relation to the prior art are to be ascertained only by a clear understanding of the distinctions between *retaining* walls and *sustaining* walls; and by the proper classification of retaining walls as they are known today as (1) Gravity walls; (2) Counterfort walls; and (3) Cantilever, or Bone type, walls; and a recognition of the fundamental differences between these three classes.

A *retaining* wall as heretofore defined is "a wall to prevent the material of an embankment or cut from sliding," or, as defined in the Bone patent in suit, it is a wall to be used in "such places as it is desired to retain earth or other matter permanently in place with its face at an angle nearer vertical than it would naturally repose when exposed to the action of the elements or gravity." (Bone patent, lines 10-15 [R. 78 (179)].) It will thus be seen that the material function of a retaining wall is to maintain a loading upon one of its vertical faces or sides, called the rear, the pressure of which loading is in a transverse direction, tending always to cause the wall either to slide forward on its base, to bend and break, or to tilt and fall forward, thus permitting the retained material to regain its natural state as affected by gravity and the elements.

A *sustaining* wall, on the contrary, is one upon which the loading is from above, compressing the wall downward, and in which there is no tendency to slide or move upon its base, to bend and break, or to tilt and fall. *Sustaining* walls are those entering normally into the construction of foundations and

other walls for buildings and similar structures. As such, sustaining walls normally, though not always, enclose an area of greater or less extent, and they thus stand, as the four sides of a box, by their mutual support, and they further maintain a superstructure, of floor or roof, which superstructure materially co-operates in maintaining the erect or vertical position of sustaining wall or walls. Examples of *sustaining* walls are shown in the Jackson and Geisel patents. [R., 78 (186 and 194 respectively).]

The stresses and strains set up in the two classes of walls mentioned, *retaining walls* and *sustaining walls*, are entirely distinct and present different problems in engineering. In the *retaining* wall said stresses and strains are transverse against the rear of the wall, that is on the side of the embankment or fill; they are largely tensile strains, and such as result from the tendency of the embankment to push the wall forward upon its base, to cause it to tilt and fall, bend and break. In the *sustaining* wall, on the contrary, there are substantially no tensile strains to be provided for, the weight being from above and operating to compress the wall; it is only when abnormal conditions arise, such as would be produced by wind, fire, earthquake or other similar shock, or by reason of an unequal loading of the superstructure, or unequal settlement of the foundation soil that tensile strains arise in a sustaining wall. *Sustaining* walls may, therefore, be made of any simple masonry, as concrete, brick or stone, in quantities sufficient only to provide for the compressive strains, and, as such masonry is admirably adapted to assume such strains, only moderate quantities are required and such walls of economical and efficient

design have been constructed and in use from time immemorial. Such masonry is, however, insufficient, except in extremely large quantities, to meet the *tensile stresses* which fall upon a *retaining wall*, as it lacks tensile strength though possessing a high compressive efficiency.

This difficulty, that is, the deficiency of masonry in *tensile* strength, had been met in retaining wall construction, prior to the advent of the Bone invention, by retaining walls of two separate and distinct classes or types, (1) *Gravity* walls, and (2) *Counterfort* walls.

(1) The *Gravity* wall is one which, by sheer mass and weight of masonry, maintains its erect position against the transverse pressure of the retained material, and while amply efficient in most cases, is far from economical in construction. Each *lineal* section of a gravity wall, however, is adapted to assume its own loading, and each *lineal* section, no matter how small, stands for itself in the design and calculation of the wall, such design and calculation becoming, therefore, a matter of comparative simplicity.

(2) The *Counterfort* wall is one in which, in place of mass in the masonry, suitable braces or *counterforts*, are provided, which co-operate with a vertical stem or wall composed of a material having tensile strength, such as metal or reinforced masonry, to maintain it in its vertical position. This type of wall is well illustrated in the Stowell and Cunningham metal walls of Patent No. 629,477 of July 25, 1899 R. 210), in which the counterforts are represented in the patent drawings by "d," called by the inventors "knee-braces." (Line 50, R. 217.)

In *counterfort* walls, the vertical stem of the wall and the rearwardly projecting base are connected by the *counterforts*, "knee-braces," "ribs" or "nervures," at regular intervals throughout the length of the wall, and the vertical weight upon the base, as well as the transverse pressure upon the vertical stem, between each pair of counterforts, is transmitted to, and borne by, such counterforts or braces. From this it will be seen that the stresses and strains developed by the downward and forward pressure of the retained material for a considerable section of the wall, must be transmitted longitudinally to, and be borne by, each counterfort, the vertical wall and base between each pair of counterforts operating as longitudinal beams attached or fixed at each end—where secured to the counterforts. Hence it becomes incumbent upon the designer of such a wall to provide not only sufficient tensile strength in these beams (the vertical wall and base between counterforts) to prevent bulging and breaking outward and downward respectively, but also to calculate the tensile strain which must fall upon each counterfort or "knee-brace" by reason of the weight which bears upon the wall and base for a considerable distance at each side of the counterfort. Thus, while in the counterfort type of wall when constructed of concrete masonry there may be effected a considerable saving of material, this design involves complexities and uncertainties in calculation and details of construction which offset largely the gain by the reduction in mass; and *this type has, further, the disadvantage of accumulating at certain points, the counterforts, or, as called by defendants' expert, the "concentrated braces," the stresses accruing within a considerable lineal section of the wall.*

(3) *Cantilever or Bone Type Walls*—To overcome the difficulties and disadvantages encountered by the construction of both the gravity and counterfort types of retaining walls, the Cantilever retaining wall, the Bone invention of the patent in suit, was designed. This wall, in place of *mass*, substitutes *vertical reinforcing* in the wall and *transverse reinforcing* in the heel to take up the *tensile strains*, does away thereby with the need for *counterforts* or *braces*, and maintains the wall in its erect position by the weight of the retained material upon the heel by reason of transmitting directly to the vertical wall, through the reinforcement, the gravitational force upon the heel. These reinforcing members are placed at regular intervals in the wall and heel, as close as may be desired, and thus each lineal section of the wall, no matter how short, is adapted to maintain itself independently of the remaining portions of the wall, and this without in any way affecting the structure of the masonry itself, either in volume or outward shape, the need for counterforts or braces being overcome by the cantilever action, that is the action of the vertical stem and heel as cantilever beams, fixed at the toe, whereby a balance between pressure on wall and heel is maintained. *The cantilever, or Bone, wall, therefore, not only overcomes the requirement for large quantities of masonry, which is the objection to gravity walls, and does away, also, with the counterforts, or braces, of the counterfort walls, thus eliminating the complexities in the design and construction of such walls, but, in fact, combines with the simple design of the gravity wall an even greater saving in masonry than is effected by the counterfort wall, and this without loss,*



*but rather with an increase of efficiency and availability over both of the older types of retaining walls.*

#### PATENT IN SUIT.

In the construction shown in the drawings of the patent (R., 178), there is disclosed a retaining wall of inverted T-section. The wall has a comparatively thin vertical section and a heel extending to the rear thereof (to the right in the drawing), and a toe extending to the front (to the left in the drawing). The vertical wall is reinforced by metal members *e* and the heel by metal members *f*, the former being near the rear side of the vertical wall and the latter extending transversely along the upper side of the heel. The retained material *B* at the rear of the wall rests upon the heel and the weight of this material upon the heel is transmitted through the tensile strength of the metal member *f* to the vertical wall which, by reason of the tensile strength of the metal members *e* is retained thereby in vertical position. The toe extending to the front of said wall is independently reinforced by a metal structure *k* extending transversely in the toe and located near the bottom thereof. This toe co-operating with the reinforced heel and wall equalizes the loading upon the base of the wall and prevents overturning. In the drawings, there are also illustrated certain angle bars attached to the metal members *e* and *f* respectively, as for instance, the members *b* attached to the members *e* and which extend preferably above and beyond the same members *e* (Rec., 179; lines 84-87) and the members *h* and *i* secured to the members *f*. These angle bars as indicated throughout the patent, are for anchorage and addi-

tional efficiency, but are not otherwise essential to the principle of the invention.

The patent in suit has 17 claims, of which 1, 3, 5, 16 and 17 are involved in the present action. Claims 1 and 17 are quoted below as illustrative:

1. The combination with a retaining-wall having a heel, of a metal structure embedded vertically in said wall and obliquely in said heel, so that the weight of the retained material upon the heel of the metal structure will operate to retain the wall in vertical position.

17. The combination with a retaining-wall having an inclined heel and a toe at opposite sides thereof, of a metal structure embedded within said wall and heel, said structure consisting of upright bents at the back part of the vertical wall and continuing down along the upper part of the heel of said wall to the back part thereof, whereby by reason of the toe and the heel the weight of the retained material upon the heel of the metal structure will operate to maintain the wall in a vertical position.

The other claims sued on need not be quoted since if these are infringed, all are infringed. In fact, as will appear, there can be no question of infringement, if the claims sued on are valid.

#### PRIOR PATENTS AND PUBLICATIONS.

While much so-called "prior art" appears in the record, but two instances need now be referred to. The issues between the parties have been crystalized and these two examples of alleged prior art will define said issues.

It is true that the Court of Appeals below, in its opinion referred to a number of illustrations of prior art shown on a single page, namely: Bauzeitung,

1894; Planat, 1896; Stowell & Cunningham, 1897; Rehbein, 1894; Planat, 1894; Nolthenius, 1895. Of these, from what has been said before, it is apparent that Stowell & Cunningham, Rehbein, Planat, 1894, and Nolthenius, 1895, are of no moment, because they are of the counterfort type of wall, and for this reason, if for no other, are of no value in disclosing what is understood to be the invention of the Patent in suit herein. But one of those last named, therefore, will be referred to in detail, that is, Stowell & Cunningham,—and this only because it was the patent on account of which the trial court dismissed the bill. The *Bauzeitung* alleged wall represents merely an illustration of a section tested to determine the breaking strength of a concrete or cement web of this shape and thus has no bearing whatever.

But one other publication of any interest was referred to by the court below in its decision, namely, the Coignet patent of 1869. (R., 183.) This patent appeared to the Court of Appeals below according to its opinion, to cover “the principle of reinforced concrete which was for the avowed purpose of ‘giving greater cohesive strength’ so that ‘the walls or size of the articles may be greatly reduced.’” Without going into the question of to what extent this old patent foretold or prophesied the modern art of reinforcing concrete structures, it is sufficient to say that the patent in suit and the claims here in issue, do not purport to cover broadly the reinforcement of concrete structures. The petitioner makes no claim that he was the first to discover the art of reinforcing concrete. His patent in no way depends upon the novelty at the date of his invention of the reinforcement of con-

crete by the use of a metal web therein. This Coignet patent may therefore be dismissed without further remark.

STOWELL & CUNNINGHAM PATENT. (Rec., 210.)

The Stowell *et al.* patent would require no particular mention except for the fact that it is the patent on account of which the trial court dismissed the bill. *It does not show a reinforced concrete retaining wall.* It is not a cantilever wall. It shows a *counterfort* wall. The wall is, in addition, a *metal wall*. It comprises an upright metal web and a horizontal metal base secured to the upright web by means of metal counterforts. It is exactly the same type of wall as was found in the record in the case before the Court of Appeals for the Sixth Circuit (Huebner Patent, Rec., 239), and which that court refused to consider as having any bearing upon this patent in suit. In the Stowell *et al.* patent, the use of cement plaster or other coating is shown or described for use on one or both faces of the upright metal web and upon the counterforts and also in connection with the base; but this coating in no sense had anything to do with the wall itself. It was a *coating* pure and simple and of no more moment in the structure than paint or other rust-proof *coating* designed to cover the metal and to protect it from the elements. *The metal structure comprised the wall.* The cement plaster or other material used was merely a weather protecting covering for the metal.

However, Judge Anderson, who refused to consider the distinction made at the trial between the

prior counterfort walls and the novel Bone cantilever reinforced concrete wall, held that this patent disclosed substantially the same thing as that claimed in the Bone patent and took the position that if said patent had been before the Court of Appeals of the 6th Circuit, that court would have been of the same opinion.

The essential fact for this court to note is that Stowell & Cunningham not only did not show a cantilever type of wall but that in addition it did not even show a reinforced concrete retaining wall of any kind.

PLANAT PUBLICATION 1896. (Rec., 117-93.)

This publication represents the only thing of any moment that may be urged against the patent in suit. We cannot but admit that the engineer of this Planat publication was driving at and *attempting to solve* the very problem solved by Bone. No more evidence of this is required than the quotation from the publication that is quoted by the Court of Appeals below in its opinion:

"These computations suppose that one has effectively realized the fixing of the vertical wall to the horizontal slab at their junction. This fixing requires special precautions. The bars at the point of junction exert a pulling force, which tends to pull them out of the concrete.  
\* \* \* But here we have only a half beam on a cantilever span. It is necessary that the extremities of the bars in the region of fixation should be held in a sufficient mass of concrete or maintained by some other means.

One is able to reduce these projections in a very large measure if one takes care to bind together the vertical bars and the horizontal

bars at their point of intersection. In this way the pull of the bar is carried not only on its prolongation, arranged for anchorage, but also on the bar which is perpendicular to it and whose great length permits it to offer a large resistance to the force tending to pull it out transversely."

This quotation with the cut appearing on page 117 of the record, represents the substance of this publication.

It is easy now, with the Bone patent before one, with the practical results of Bone's work in evidence, with the experience engineers have had in building the Bone wall, for a civil engineer as Mr. Hatt, defendants' expert, to find in this engineering, theoretical discussion, a disclosure of the features of the Bone patent. Undoubtedly it approaches Bone's disclosure in his patent. Undoubtedly Planat forecast the future of the reinforced concrete, cantilever retaining wall brought about and ultimately produced by the Bone patent.

But is this engineering, scientific, theoretical discussion so clear and exact as to enable those that followed, without the Bone patent and Bone's work under his patent, to give to the world the Bone retaining wall? Is mere scientific conjecture and discussion to invalidate the grant of a patent? Is this publication so clear and distinct in that it shows everything described and claimed in the Bone patent, that it is the kind of publication meant in the statute?

We contend positively that the court shall find the negative in answer to these questions. Planat theorized and discussed. Bone conceived, patented

and built. Planat experimented in his mental laboratory. Bone gave a pioneer invention to his public.

The solution of the question of the sufficiency of the Planat disclosure is undoubtedly attended with difficulty. The trial court found it unnecessary to consider this Planat publication. The Court of Appeals below certainly found it insufficient by itself, because it required the conglomerate picture of all these so-called publications pictured in its opinion (Rec., 2459), in order to enable it to sustain the decision below. And even then it was not sufficiently convinced to declare the claims invalid.

This Planat publication can in no way be aided by any of the other pictures on this page of the opinion. It stands alone. If it is not sufficient in itself, there is nothing in the record to aid it as a prior publication, in invalidating the patent in suit.

As we stated at the beginning of this brief, it is incumbent upon the court to place itself in the position in which it must have been at the date of the Planat publication in determining its efficacy as a publication against the patent in suit. Any difficulty or doubt that may arise in doing this must be resolved in favor of the patent which is *prima facie* valid. Absolute certainty must be had in the mind of the court in order that this publication, brought to light long after the issue of the Bone patent, and then only for use in defeating the grant, before it shall find this Planat publication a sufficient disclosure to invalidate the patent.

An invention is a concrete entity. It is a *thing* and not a *theory*. *Professors and academicians*

*theorize, argue and discuss. Inventors act and produce.* One of the primary requirements in interference proceedings between rival inventors in point of time, is *reduction to practice*. The fact that one may have *conceived or theorized earlier* is of no value. It is that one who first follows *theory or conception by completing the invention*; by making it a *concrete thing of use to the public*; who is granted the patent. Is anything less to be required in a publication, that is set up to *defeat* a patent which has been granted.

The statute can not mean that a prior publication of an *unproven theory* shall defeat a patent covering a *concrete invention* that has been completed and *reduced to practice*. The publication must be of the same value to the public and give them the same *concrete entity* as the patent, otherwise the publication can be of no value to defeat the patent.

#### INFRINGEMENT.

The question of infringement is so clear that it is impossible to understand how the Court of Appeals below could have found that the claims in issue were not infringed. A simple inspection of the two views shown on the page at the end of the brief—the one illustrating the Bone Wall and the other the respondent's wall—will suffice to indicate clearly that the two walls are identical.

What the Court of Appeals below meant when it said that, "If there is any patentable novelty disclosed by Bone's wall, it is by reason of the *location of the reinforcement*" (Rec., 111), it is impossible to determine. But after such finding it is equally impossible to see why that court after comparing



the sections of the two walls failed to find infringement. *The location of the reinforcement is manifestly the same in both cases.*

Undoubtedly this court will find that the two walls are identical and that *the claims are infringed.*

### CONCLUSION.

We are confident that this court will find that the Bone patent in suit, heretofore sustained by the Court of Appeals of the Sixth Circuit, is *valid* and that the claims in issue are *infringed* by the respondent's construction.

The Bone wall was *novel* at the time of its invention. It represented a *useful* and *beneficial advance in the art*. It has proven of great *advantage* and *value* to the public and has been the *means of large saving*.

The respondent's wall is manifestly the *Bone wall*.

Finally Bone—the petitioner—should not be robbed of the advantages that should accrue to him under his patent because of the *recently discovered published theories* of a professor, when, had it not been for Bone the inventor, *said theories, though published, would have remained forever in the dust from which the respondent recovered them.*

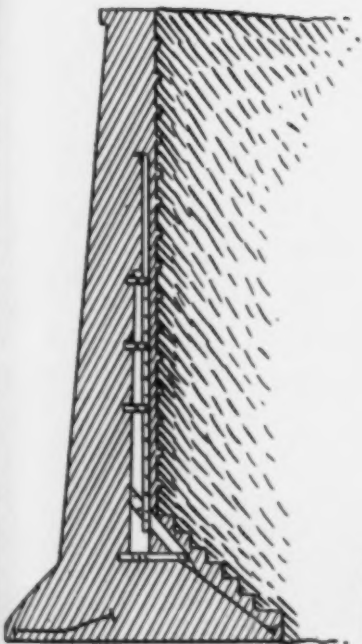
The Court of Appeals of the Seventh Circuit should be reversed.

Respectfully submitted,

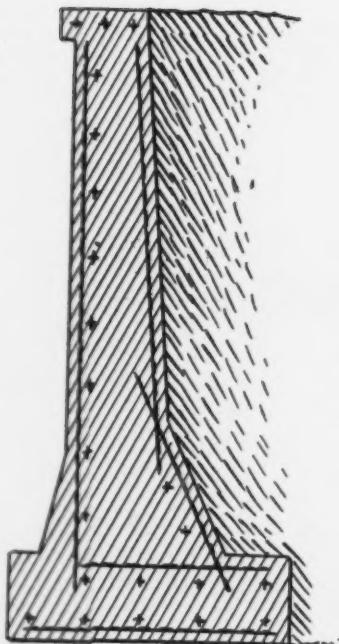
CLARENCE E. MEHLHOPE,  
*Counsel for Petitioner.*

Chicago, Illinois,  
March 31, 1919.





*BONE 1899*



*MARION COUNTY*



FILED

APR 17 1935

JAMES D. HANCOCK

CLERK

IN THE

# United States Supreme Court

FRANK A. BONE,

*Plaintiff and Petitioner,*

vs.

COMMISSIONERS OF MARSHEN COURT

*Defendants and Respondents.*

No. 33

BRIEF FOR APPELLEES AND RESPONDENTS

V. H. LOCKWOOD,

Indianapolis, Ind.,

Counsel for Appellees and Respondents.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40
- 41
- 42
- 43
- 44
- 45
- 46
- 47
- 48
- 49
- 50
- 51
- 52
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60
- 61
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
- 70
- 71
- 72
- 73
- 74
- 75
- 76
- 77
- 78
- 79
- 80
- 81
- 82
- 83
- 84
- 85
- 86
- 87
- 88
- 89
- 90
- 91
- 92
- 93
- 94
- 95
- 96
- 97
- 98
- 99
- 100

IN THE

# United States Supreme Court

---

FRANK A. BONE,

*Plaintiff and Petitioner,*

vs.

COMMISSIONERS OF MARION COUNTY,

*Defendants and Respondents.*

No. 2459.

---

## BRIEF FOR APPELLEES AND RESPONDENTS.

This is a suit for an injunction, and consequent profits and damages, for the infringement of letters patent No. 705,732, for retaining walls, granted July 9, 1902, to the plaintiff. The defendants are said to have infringed said patent by the concrete wing walls of certain small bridges built in Marion County, Indiana. (Rec., after p. 16.) Only the very broad claims, 1, 3, 5, 16 and 17, of said patent are claimed to have been infringed by walls 252 and 407, (Rec. 18), claim 16 by wall 408 (Rec. 19), and wall 420 (Rec. 19) infringes none.

The *Bill of Complaint* was dismissed for want of equity, by the District Court, and the opinion of that court, which was given orally during the trial, is to be found Rec. 69. It shows that the District Court did not consider these claims to be valid in view of the newly discovered prior art

set up in this case, if said claims were broadly construed. If the claims were limited to the Bone construction shown, then they were not infringed.

The Circuit Court of Appeals affirmed the decision of the District Court and in its opinion (Rec. 111) held that the invention, as broadly set forth in the claims in issue, were met by the Stone & Cunningham patent disclosure, and the Bauzeitung and Planat publications, and the Court said:

"If there be any patentable novelty disclosed by Bone's wall, it is by reason of the location of the reinforcement. In fact, this seemed to be the patentee's own idea of the novelty, for he says:

'The said invention consists principally of introducing into masonry of concrete, \* \* \* a framework of steel or iron in such way that the whole wall is so much strengthened thereby that the volume of the masonry may be greatly reduced and yet the \* \* \* strength \* \* \* will be ample.'

"It is not necessary to decide whether the location of the reinforcement in the concrete in order to give greater strength in 1899 evidenced patentable novelty when applied to retaining walls, for if the claims in this patent are so restricted and limited, it is obvious that defendant's wall did not infringe in this respect."

The Court also held that the prior art upon which it finds said claims invalid is clearly distinguished from the prior art considered in the Akron case in the Sixth Circuit Court of Appeals.

Thus all four judges agreed in the disposal of this case, and, therefore, we have felt that the petition to this Court for the writ of certiorari was the result of the usual desire of a party defeated in a patent suit to have it tried again.



The *defenses* are:

1. Claims 1, 3, 5, 16 and 17 are invalid for lack of novelty and invention in view of the prior art.

2. Said claims are not infringed, particularly if they are held valid by limiting them in view of the prior art, to the Bone reinforcing structure.

The plaintiff thought, when he applied for his patent, that he was entitled to both broad and narrow claims on his disclosure. The prior art set up in this case shows that he was mistaken as to the patentability of the broad claims.

Before this suit the Bone patent was sustained on these same claims by the Sixth Circuit Court of Appeals in *Bone vs. The City of Akron* (221 Fed. Rep. 944). The District Court of Colorado followed the Sixth Circuit Court of Appeals in *Bone v. Denver*, and without having before it the new prior art relied upon in this case. But the new art set up in this case shows that the decision of the Sixth Circuit Court of Appeals were erroneous.

The *new prior art* which was not before those courts and not before the Patent Office and which invalidates said claims, is:

(1) The Bauzeitung wall, 1894 publication, "Deutsche Bauzeitung". (Rec. 119, before p. 49; 155, after p. 68, and p. 98, translation).

(2) The Rehbein wall, 1894 publication, "Monier-und Beton-Bauwerke". (Rec. 125 and 127, before p. 49; 159 after p. 68, and p. 84, translation).

(3) The Nolthenius wall, 1895 publication. Rec. 121 and 123, before p. 49; 157 after p. 68, and p. 81, translation).

(4) The Planat wall, 1894 publication. (Rec. 115, before p. 49; 161, after p. 68, and p. 88, translation).

(5) The Planat wall, 1896 publication. (Rec. 117, before p. 49; 163, after p. 68, and p. 93, translation).

(6) The Stowell & Cunningham wall, U. S. patent filed March 25, 1897. (Rec. 214, after p. 78, and file wrapper, p. 49).

Each of the foregoing six publications of the prior art clearly discloses all of the features of invention specified in the introduction of the Bone patent and the last paragraph of the description thereof and the claims in suit, and the statements of the Sixth Circuit Court of Appeals in their opinion and of all plaintiff's witnesses. They fully anticipate the claims of the Bone patents in suit and render them void. (See post, p. 8).

The generalizations in the brief in behalf of Bone are not sustained by the evidence in this case.

Bone was not a pioneer in the art, as this evidence clearly shows, and the construction shown in his patent has not gone into extensive use all over the country. The insertion of metal bars for reinforcing concrete constructions wherever the same was thought to be weak, has been extensively employed in this country, just as nails are driven into a structure where nails are needed. And the great mass of people who have reinforced concrete have not recognized or paid tribute to Bone.

Bone was not the first to replace gravity walls by reinforced concrete walls, of the cantilever or any other type, as this evidence clearly shows. What the engineers scoffed at was the crude character of Bone's fabricated reinforcing construction.

The value of Bone's wall and its advantages to the public have been questioned and have not been acknowledged by the great mass of reinforced concrete builders and workmen. He has sought to claim a type of wall, that which is maintained by the weight of the earth on the heel, as his, although he never originated it, but in the first instance relied upon his own fabricated reinforced structure, as instanced in the first wall he built at Black Lick, Ohio. (See Fig. 11, p. 14, of the yellow-backed trade catalogue in the record.) He afterwards modified his actual wall construction and claims to meet the changes made by engineers and others, but it was all an afterthought, and likewise his yellow trade catalogue in the records is a production long subsequent to his patent and sets forth the wall building art as developed by others who have been doing the actual reinforced concrete building for the country.

### THE INVENTION.

The invention relates to reinforced retaining walls, whether made of concrete or masonry. Retaining walls are those which have a fill of earth or other material on one side thereof, which is retained or held back by the wall. The type of wall involved herein has an upright portion and a heel or base portion secured together by reinforcing so that the weight of the earth fill resting on the heel or base will tend to maintain the wall upright.

The plaintiff contends that his invention is substantially as broad as above stated. The defendants contend that his

invention, if any, is in the specific character of the metal reinforcing "bent" or structure in the wall, all other ideas having been old.

*The Invention Disclosed in the Patent.*

The plaintiff, in his patent (Rec. 178, after p. 78), shows and describes a rigid unitary metal "bent" or "structure" erected and put in the mold or place for receiving the concrete in forming the retaining wall.

The plaintiff in the introduction to his patent stated his invention as follows: (Rec. 179, after p. 78, ll. 7 to 26.)

"My invention relates to improvements in retaining walls for abutments of bridges, seawalls, banks of streams, embankments, cuts, dams, dry-docks, and such places as it is desired to retain earth or other matter permanently in place with its face at an angle nearer vertical than it would naturally repose when exposed to the action of the elements or gravity.

*"The said invention consists principally of introducing into masonry of concrete, stone, or brick a framework of steel or iron in such a way that the whole wall is so much strengthened thereby that the volume of the masonry may be greatly reduced, and yet the height, base and strength against overturning, bulging or settling will still be ample.*

"The object (stability with reduced volume) is further accomplished by the peculiar shape of the cross section of the wall allowable."

After describing the wall shown in the drawings, the plaintiff further defines his invention: (Rec. 180, after p. 78, l. 129.)

"I am aware that retaining walls have been constructed of concrete and steel, but none to my knowledge (1) have been supported on their own base as

mine, (2) nor have any of them entirely enclosed the steel within the concrete, (3) nor have any of them used the weight of the material retained as a force to retain itself."

In his description, Bone says (Rec. 179, after p. 78, l. 45) that his wall is the shape of "an inverted T", or "in the form of an L".

He states: (Rec. 179, after p. 78, l. 52).

"It is evident that a wall of the shape mentioned is not so liable to be overturned from the pressure of material behind it as would a wall of the same height and area of section, but having a rectangular trapezoidal or triangular shaped section, for it is impossible to obtain as much base and height with a given amount of masonry with these last named shapes as it is with those described above. \* \* \* The weight of the material resting on the heel acts, however, to cause said heel to press on the earth below, and thus cause friction to prevent the whole wall from sliding outward.

"The retaining wall is preferably composed of cement concrete masonry with skeleton or framework of steel or iron located at the back parts, where the greatest tensile strain comes, and of other strengthening rods of metal located at the lower part of the toe. *Brick or stone masonry* may, however, be used in place of concrete or a concrete backing may be used with a brick or stone face."

He further states: (Rec. 170, after p. 78, l. 72).

"With the earth pressing outward on the vertical part of the wall and downward on the heel or back part of the base it is evident that the internal stresses created within the wall will act to create tension in the rear, and compression in the front or the pressure outward results in an upward pull at the back and a downward push on the front part of the vertical part of the wall."

He further states: (Rec. 180, after p. 78, l. 110).

"In building my retaining wall the metal skeleton is first erected in place, each intersection being fastened together with a sufficient number of rivets or bolts. The masonry is then built around the frame, completely covering it and protecting it from the elements."

All of the claims involved are limited to "a metal structure" imbedded in a wall. The patent shows a united metal skeleton structure, as all parts are metallically secured together (Rec. 21). In the patent it is called a "bent" and plaintiff's expert said that a bent is a frame made before the concrete is put in place (Rec. 21), but the plaintiff now claims that separate rods introduced into the concrete and not metallically connected with each other is a "skeleton" or "metal structure", as contemplated by the patent. (Rec. 21, 45).

As to the toe of the wall, the patent says: (Rec. 180, after p. 78, l. 39).

"The rod k, with an enlargement on each end, acts to strengthen the toe at the bottom where the greatest tension stress occurs. These rods are placed at proper intervals along the length of the wall, generally two or three feet apart."

Nothing more is said about the toe reinforcement in the description, but it is aggregated as an element in claim 16, "said toe having an *independent* metal structure imbedded therein."

*The Invention as Stated by the Sixth Circuit Court of Appeals.*

The record in the Akron case does not contain any of the prior art relied upon in this case. (Rec. 30. See Exhibit Record).

In that opinion the Circuit Court of Appeals stated the invention claimed as they understood it to be: (Rec. 113, before p. 49).

"It consists of a comparatively thin vertical wall, broadening at the base into a heel and toe. The heel extends back a considerable distance underneath the earth bank to be retained, and, accordingly, so long as the entire wall structure remains unitary, the weight of the earth bank resting on the heel, operates to prevent the wall from tipping over forward, and thus, the same body which exerts a horizontal forward pressure, especially upon the upper part of the wall, is caused to resist that pressure by its own weight. To prevent breaking of the wall by lateral strain, Bone provided continuous reinforcing in a vertical plane, extending up and down the wall and obliquely in the heel. This gave tensile strength and adapted it to resist the greatest strain."

In view of the prior art in that case, the court said:

"Sustaining walls had been built of concrete with vertical reinforcement, but they were maintained against side strain by cross-ties, or beams, without which they might tip over."

Evidently the court had in mind the Jackson patent No. 462, 437 (Rec. 186), showing a cellar wall.

The court further said:

"If the prior art had shown a structure intended for a retaining wall, and having a heel such that the weight of the earth thereon would tend to keep the



*wall erect, it might be difficult to find invention in merely adding the form of reinforcement most suitable to create the desired tensile strength; but we find no such earlier structure. Those which have that shape are sustaining walls only, and were so obviously unfit for use as retaining walls that no one seems to have seen the utility for the purpose, of which the form, when properly adapted and strengthened, was capable."*

All of the new references in our case are retaining and not sustaining walls and the foregoing ideas are therein shown to have been old and common. (Rec. 31).

That court further said:

*"There is also a prior wall, wholly of metal, fairly disclosing a unitary heel adapted to hold the wall erect; but to see that this could become merely a skeleton imbedded in concrete, may well have required, in 1898, more than ordinary vision."*

The prior wall thus referred to probably was Fig. 35 in the Brannon British patent. (Rec. 236).

That court construed the claims as follows:

*"They cannot be limited to the form of 'metal structure' shown in the drawing, with the view which we have indicated as to what the patentee accomplished, the claims do not require that limitation, and it cannot be given to them and preserve the distinctions between these claims and some of those not sued upon."*

With this construction of these claims, each of the six new references makes them absolutely void.



*The Invention as Stated by the Witnesses.*

The witnesses had ideas varying in different ways from the statements in the patent and by the Court of Appeals of the Sixth Circuit. Plaintiff's expert, Eldredge, said that the peculiar novel feature of the Bone invention was "the inclined heel, mainly" (Rec. 19), as it saved a large quantity of material. He also said that the invention consists in:

"putting the incline on the back in such a manner as to put your dangerous point,—the point where ruptures are most likely to occur,—*higher up*, nearer the top." (Rec. 20).

This would make a counterfort wall. (Post, p. 24.)

Plaintiff's attorney told the court that the invention was in the cantilever form of the wall (Rec. 42) as distinguished from the counterfort wall. (Rec. 43). Yet the inclined heel idea of plaintiff's expert Eldridge is in the nature of a counterfort wall.

Luten said that the invention consisted of the upright wall secured to the base so that the weight of the material upon the base enables the wall to be supported and the reinforcement is placed in the wall itself and not in buttresses. (Rec. 42).

Bone in his yellow-covered circular to the public (Rec. p. 35, after p. 48), states that his invention is "quite broad":

"For example, such as 'A retaining wall having a heel (strengthened by metal within and connected with braces in the wall by suitable brace rods) extending to the rear of the base, upon which the retained material rests and acts by gravity to keep said wall in its normal position'. It can be plainly seen that this is not limited to a special system of rein-

forcing a wall having a heel on which the earth rests, and acts by gravity to maintain the said wall in position."

### THE PRIOR ART.

Professor Hatt relates the general art at the beginning of his testimony. (Rec. 25).

The Coignet patent (Rec. 183, after p. 68), in 1869, disclosed the general art of reinforced concrete, namely, the introduction of "skeletons or metallic framework" in concrete for "the purpose of strengthening the same and giving it greater cohesive strength."

Coignet says:

"The irons to be thus introduced may be arranged in such a manner as to interlace each other, so that by the combination of this metallic skeleton and of agglomerated artificial-stone paste the thickness of the walls or size of the articles may be considerably reduced and yet great strength be attained."

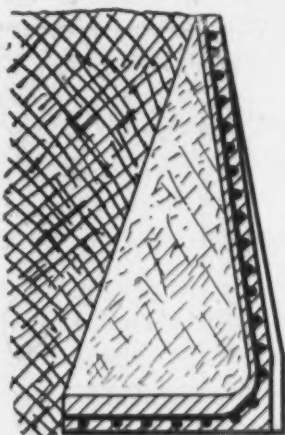
Thaddeus Hyatt put the idea of Coignet into mechanical shape and published a book in 1877. (Rec. 25).

The following patents cited herein show all sorts of metallic reinforcement for concrete structures:

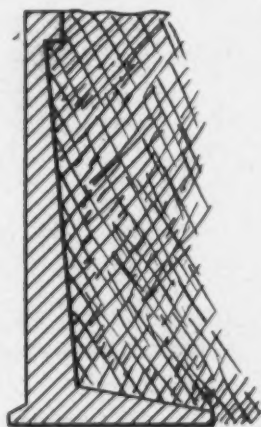
Jackson, No. 462,437, has overlapping bars. (Rec. 186, after p. 68).

Haines, No. 508,308, has a unitary metal skeleton. (Rec. 190, after p. 68).

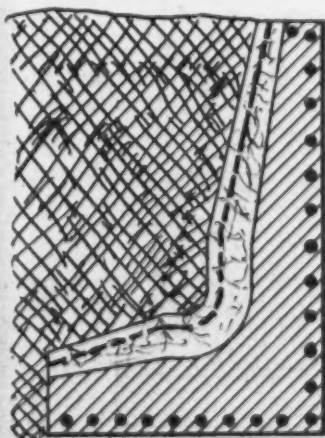
Waite, No. 606,696, shows many varieties. (Rec. 200, after p. 68).



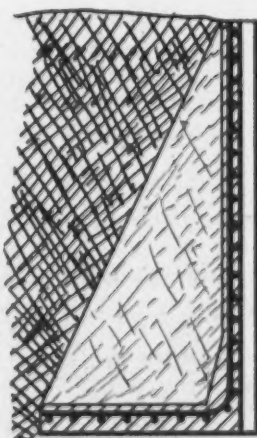
REHBEIN - 1894



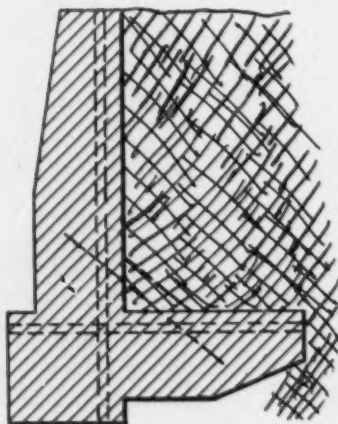
BAUZEITUNG - 1894



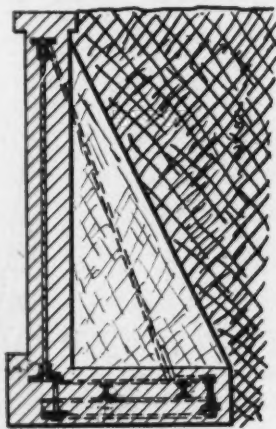
PLANAT - 1894



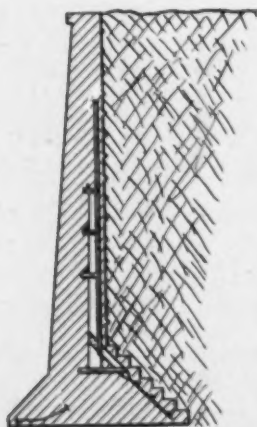
NOLTHENIUS 1895



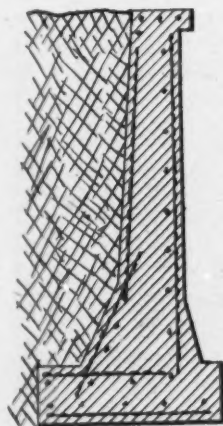
PLANAT-1896



STOWELL &amp; CUNNINGHAM-1897



BONE-1899



MARION COUNTY

DeMan, No. 606,988, shows the corrugated bar used by the defendants. (Rec. 206, after p. 68).

Stowell & Cunningham, No. 629,477. (Rec. 210, after p. 68).

Brannon British patent No. 2128 of 1874, shows quite a variety. (Rec. 219, after p. 68).

### *The Bauzeitung Wall.*

The Bauzeitung wall, 1894, is shown in Rec. 119, after p. 68, as it appears in the publication and in Rec. 155, after p. 68, where it is illustrated by Professor Hatt, and the translated description is found in Rec. 98. This is a retaining wall for exactly the same purposes as the Bone patent wall. As seen in Rec. 119, after p. 68, and 155, after p. 68, his Fig. 25 shows a reinforced concrete wall with two counterforts, namely, the two triangular braces. Fig. 28 is a cantilever wall without any reinforcing. In both, the earth fill resting on the heel or base, maintains the wall upright. It is stated: (Rec. 98).

"This retaining wall, on which a 'Gebrauchsmusterschutz' (utility model patent) has been granted, consists of a vertical and a horizontal member. These two members are rigidly connected with each other. The ratios are so chosen that the resultant of the earth thrust passes through the horizontal part or through the foundation, respectively, so that there exists no longer any tendency to tilting so long as the two parts continue to be firmly connected with each other. To increase the stability, the horizontal part is furthermore connected at its rear end by means of anchors with the underground.

"The rigid connection of the two parts may be effected either, as shown in Fig. 25, by continuing the anchors in the masonry or in the concrete of the piles located at the rear, or, as shown in Fig. 28, by

enlarging both parts at their joint angle. Of the two methods of construction, the former one, with iron anchors, is to be specially recommended on account of its greater safety."

The result of tests is stated at the bottom of Rec. 101 and favorably to this structure. On Rec. 102 it says that this would be cheaper than the unanchored retaining wall or masonry wall.

Both Bauzeitung walls are like the Bone wall and Bauzeitung suggested reinforcing the wall. (Rec. 98, 101 and 102).

#### *The Rehbein Wall.*

The Rehbein wall, 1894, is shown in the lower right-hand corner of Rec. 127, after p. 68, and Rec. 159, after p. 68, Professor Hatt's drawing, the earth fill being on the left-hand side and the translation, Rec. 84. This is disclosed in a German publication, Berlin, 1894. It is a counterfort wall, the weight of the earth on the base maintaining the wall upright. Those bridges were built in Germany, Austria and Venezuela. The publication says: (Rec. 84).

"The dangerous bending-strains, also that so easily result through careless back-pillars and putting on of the coating are effectively and securely met by the iron reinforcements, single or double according to need, reinforcements that in the case of less favorable building-ground are provided also in the sole (base) of the structure."

\* \* \* \* \*

"In accordance with this principle a large number of culverts have been built in Germany, Austria-Hungary, and also on the Great Venezuela Railway."

Professor Hatt says that the retaining wall shown in Plate 8 of the Rehbein publication is reinforced and the weight of the earth on the base maintains the wall upright. (Rec. 25).

*The Nolthenius Wall.*

The Nolthenius wall, 1895, is shown Rec. 121 and 123, after p. 48, at the middle and the bottom of the page, and is also drawn by Professor Hatt, Rec. 157, after p. 68, and described in the publication, Rec. 81, published at the Hague.

This is a reinforced concrete wall of the counterfort type, with the earth on the base supporting the wall upright. (Rec. 39). In the description, the walls are referred to as curved plates of the Monier type which shows that they are reinforced by metal, but the description explains that the rods and bars were imbedded in the concrete and united together "so that its strength was approximately twenty per cent greater than that of the beams not imbedded." The bars extend vertically through the upright and also base portions. The publication makes the following statement with reference to the retaining wall shown in the drawings: (Rec. 83).

"The flooring was given a sufficient width that the moment of pressure of the earth against the floor was greater than the moment of the horizontal component of the pressure on the upright, both of these considered in relation to its base so that no anchoring should be necessary. As a rule, therefore, this is the case when the ground plan is given a depth equal to half of the height of the upright; and as a matter of fact a similar test piece remained standing when it was tested under the pressure of a

pile of pure sand. A similar piece could be placed directly on a dirt bottom, or, better still, on a bed of gravel. It could, for example, be used for the sides of a canal or for low walls where it is desired not to lower the height of the water during construction. For these units can be placed in water. If the floor is given a width equal to the height of the upright, there will, as a rule, result a fourfold security against overturning. It will, however, also suffice to place in the upright an anchor, which may be situated far above water-level and which is therefore easily adjusted."

#### *The Planat 1894 Wall*

The Planat wall of 1894 is shown and described in a Paris publication, "La Construction Moderne", Rec. 115, after p. 48. Professor Hatt illustrates it, Rec. 161, after p. 68. The translation is Rec. 88. The title of the article is "Retaining Walls", and the first paragraph sounds like the introduction to the Bone patent:

"We have no knowledge that reinforced cement has been yet applied to the construction of retaining walls. It would find there, however, an advantageous use. Walls of masonry have a volume very considerable, since they resist pressure by their mass alone; a mass rigid and elastic can necessarily have dimensions much more constricted and there may result a very sensible economy."

This discloses Bone's idea. The article further refers to the weight of the earth on the base holding the wall upright. (Rec. 89.) It is also called a "cantilever".

"In the case of the vertical part a *cantilever* span above its point of fixation B and loaded with a de-



creasing pressure we know that the fraction  $1/5$ th should be adopted.

\* \* \* \* \*

"This should be so, since we have here two systems of loading on a *cantilever* span."

The article is a technical one on the desired shape and sizes of the parts of the wall. Vertical reinforcing ribs running through the upright and horizontal portions are shown in the drawings and described in Rec. 92, and the comparison with ordinary masonry walls is made. The article further states:

"It is easy to see that the cubical contents of ordinary masonry would be much greater. For the horizontal base slab A B its dimensions are all determined since the section necessary at B is known.

"As we have indicated in the preceding one can reduce these sections on the vertical wall as well as on the horizontal base slab beyond the region which ought to be considered as dangerous—that is to say beyond the region where the breaking down of the cement is produced and the middle parts where the bars of the rib take their points of bedding and their gripping."

This is a pure specimen of the cantilever retaining wall, which the plaintiff emphasizes as his invention. It has reinforcing rods running longitudinally and reinforcing rods running vertically from the top of the wall to the bottom and then through the horizontal portion—*continuous rods*—the same as every fourth reinforcing rod in Bone's Akron wall. (Rec. 37).

*The Planat 1896 Wall*

The Planat wall of 1896 is also published in "La Construction Moderne". (Rec. 117, after p. 48.) It is illustrated by Professor Hatt (Rec. before 69), two different sizes being shown and one modified form. It is described, Rec. 93.

This wall is a true cantilever retaining wall and the reinforcing is a series of vertical rods and a series of horizontal rods in the base overlapping the vertical rods and in the modified form suggested in the publication, the angle is strengthened by an inclined rod. This discloses the defendants' reinforcement exactly.

The article states (Rec. 95):

"These computations suppose that one has effectively realized the fixing of the vertical wall to the horizontal slab at their junction. This fixing requires special precautions.

"The bars at the point of junction exert a pulling force which tends to pull them out of the concrete. In a piece placed on two supports the tension to the right is balanced by a tension to the left on the same bar. But here we have only a half beam on a *cantilever* span. It is necessary that the extremities of the bars in the region of fixation should be held in a sufficient mass of concrete or maintained by some other means.

"One is able to reduce these projections in a very large measure if one takes care to bind together the vertical bars and the horizontal bars at their point of intersection. In this way the pull of the bar is carried not only on its prolongation, arranged for anchorage, but also on the bar which is perpendicular to it and whose great length permits it to offer a large resistance to the force tending to pull it out transversely.

\* \* \* \* \*

"In constructions of this nature it is evidently

the fixation which exacts all the attention of the constructor. One can, however, consolidate it also by means of some bars placed at  $45^{\circ}$  in the dangerous angle and embedded in the two perpendicular walls."

*The Stowell and Cunningham Wall.*

The Stowell and Cunningham patent is found in Rec. 214, after p. 78. The patent is dated July 25, 1899, and was filed March 25, 1897, see particularly the file wrapper contents, Rec. 49, certified from the Patent Office, and showing the filing date which carries the effective date of the Stowell and Cunningham wall as a prior invention back to its filing date. *Drewson v. Hartje Paper Mfg. Co.*, 131 Fed. 734 (Sixth C. C. A.).

The form shown in Fig. 3 (Rec. 214, after p. 78) discloses everything in the Bone patent so far as the claims in issue are concerned, although it is a counterfort wall. The metal reinforcing is wholly enclosed in the concrete, and the fact that the plate is imperforate is immaterial as other patents show skeleton reinforcing and that is shown in the base of the Stowell and Cunningham wall.

The Stowell and Cunningham patent states: (Rec. 217, after p. 78, l. 11).

"The invention relates to walls for sustaining the pressure of earth, water, or other solids or liquids or of superimposed loads, or both, *such as retaining walls, dams, reservoir-walls, piers, abutments, dikes, levees, bulk-heads, tanks, revetments, and the like.*"

That patent also states:

"It is important that the face-plate and foundation be firmly connected, so that the latter shall resist a pressure tending to overturn the structure and re-

sist pressure due to a load and that the foundation be stiffened to resist upheaval between the braces, and that all inaccessible parts be protected by a preservative covering.

"The advantages of this form of construction over brick or stone masonry are less cost and greater facility of erection for a wall of equal strength.

\* \* \* \* \*

"We are aware that metal beams, lath and such like structures have been embedded in cement and this matter is not of our invention."

They were seeking to get an invention on the continuous plates a, over the old skeleton structure, which now Bone is trying to claim.

#### SUMMARY OF PRIOR ART.

Let us take claim 1 as a specimen of the claims in suit. It is:

"1. The combination with a retaining wall having a heel, of a metal structure embedded vertically in said wall and obliquely in said heel, so that the weight of the retained material upon the heel of the metal structure will operate to maintain the wall in vertical position."

We find in each of the new prior publications and in the Stowell & Cunningham wall this combination in every detail—the retaining wall with the heel—with a metal structure embedded therein vertically in the wall and obliquely in the heel, so that the weight of the earth on the heel will maintain the wall upright. "Obliquely" disposed reinforcement, emphasized so much by Mr. Eld-

ridge, expert for the plaintiff, is shown in the counterfort braces in *Bauzeitung*, Fig. 25, in *Nolthenius*, in *Rehbein* and in the *Stowell and Cunningham* walls. The oblique reinforcing is shown in the body of the wall in *Planat*, 1894, and *Planat*, 1896 (in the modified form described herein).

The statement of invention in the introduction of the Bone patent is shown in each of the six prior publications.

The statement by Bone at the end of the specification (Rec. 180, after p. 68), where he said that none before him shows a retaining wall (1) supported on its own base, (2) entirely enclosing steel within the concrete, (3) and using the weight of the earth fill on the base to hold the wall upright, was a mistake. Each of the six prior publications shows each and all of these new features which Bone thought he had originated.

Each of the six prior publications shows everything considered new by the United States Circuit Court of Appeals of the Sixth Circuit, including their important statement:

"If the prior art had shown a structure intended for a retaining wall, and having a heel such that the weight of the earth thereon would tend to keep the wall erect, it might be difficult to find invention in merely adding the form of reinforcement most suitable to create the desired tensile strength; but we find no such early structures."

Each of the new prior publications shows what the Sixth Circuit Court of Appeals did not find in the prior art before it. The Sixth Circuit Court of Appeals also said:

"There is also a prior wall, wholly of metal, fairly disclosing a unitary heel adapted to hold the wall erect; but to see that this could become merely a skeleton imbedded in concrete, may well have required, in 1898, more than ordinary vision."

We see that the skeleton reinforcing was quite common in such retaining walls prior to 1898 in the Planat 1894 and Planat 1896 walls and in the Nolthenius wall and the Rehbein wall and the Bauzeitung wall. And even Stowell & Cunningham disclaimed the skeleton reinforcement as being old when they applied for their patent in 1897, and, therefore, predicated novelty upon the fact that their reinforcement was not skeleton. As they said (Rec. 135 and 218):

"We are aware that metal beams, lath and such like structures have been embedded in cement and this matter is not of our invention."

Superiority of reinforced concrete retaining walls over ordinary old masonry walls was well considered before Mr. Bone's invention, although he thought he was the first to discover it. It is discussed fully in Planat 1894 publication (Rec. 88), in the Bauzeitung publication (Rec. 38), and the Nolthenius publication (Rec. 83). In the Stowell & Cunningham patent it is stated:

"The advantages of this form of construction over brick or stone masonry are less cost and greater facility of erection for a wall of equal strength." (Rec., 218, before 69.)

#### *Counterfort and Cantilever Walls.*

A counterfort wall is one which is buttressed or braced by vertical braces or counterforts located at intervals and connected by longitudinal reinforcement.

A cantilever wall is one with a heel or laterally extending base with vertical bracing located close together all along and connecting the wall and the heel or base, as in the walls shown on pages 13 and 14. (See Rec. 37.)

So far as any of the claims in suit go, it is immaterial whether the wall be counterfort or cantilever, for the earth fill on the heel would act just the same to maintain the wall upright, the stresses running according to the details of the reinforcement.

The distinction between counterfort and cantilever walls is therefore immaterial in this case and is not referred to in the Bone patent. This distinction is now made by plaintiff in the hope of disposing of the new prior art which is erroneously said by counsel to show only counterfort walls.

Bone has always considered his invention to include and cover counterfort walls. See the Akron wall (Rec. 114, before 49), which shows in a short section two counterforts and it is so stated in Bone's publication about it. In the printed trade circular (Rec. 108) Bone includes counterfort walls and does not exclude them.

The fact is that Bone's reinforced wall, as shown in his patent, is practically a counterfort wall, the bents being connected in the base by the cross rods. If the bents were put further apart, they would need more such cross reinforcing; if put closer together, they would need less or none, obviously.

Defendants' retaining walls have cross rods like that shown in the Nolthenius wall (Rec. 157, after p. 68), in the Rehbein wall (Rec. 159, after p. 68), and in the Planat 1894 wall (Rec. 161, after p. 68). Defendant's cross rods trans- from that shown in said prior walls. In Planat 1896 wall from that shown in said prior walls. In Planat 1896 wall (Rec. 163, after p. 68), Bone's idea is realized, as there are no cross bars there since the other bars are put close enough together to make it unnecessary.

Hence, Bone has no new teaching about counterfort walls and as for cantilever walls, he says nothing about them, but they are distinctly described and referred to in Planat 1894 publication where he says:

"In the case of the vertical part a *cantilever* span above its point of fixation B," etc. (Rec., 90.)

And in the Planat 1896 publication where he says:

"But here we have only a half beam on a *cantilever* span." (Rec., 95.)

Both the Planat walls are cantilevers and also Fig. 28 of Bauzeitung. Hence, the argument by counsel about cantilever walls is a waste of time.

#### THE TOE—CLAIM 116.

Great effort was made to sustain claim 16 which included in the toe a fragment of an iron rod *k* shown in Fig. 1 of the Bone patent. As there shown, if the earth under the base be soft, his wall might be inclined to topple over to the left. So he placed a pile under the toe of the wall. And for fear it might possibly break at that toe, he reinforced the toe by putting a short bar *k* at "proper intervals along the length of the wall, generally two or three feet apart."

The ordinary layman, knowing what was known in 1898 in concrete work, would feel that a workman who did not reinforce the toe with some ordinary reinforcing metal, if the toe were inclined to be weak, would not have ordinary common sense. The Sixth Circuit Court of Appeals



did not dignify that little piece of workmanship by declaring it invention or referring to it at all.

Also the relation between the toe reinforcing bar *k* and the remainder of claim 16 seems to be aggregation only. If there be no need of a toe, as in the L-shaped walls referred to in the Bone patent (Rec. 179, after p. 68, l. 45), no extra reinforcing is needed, but where a toe is used which might break, Bone makes a great claim of invention for putting in reinforcing at that weak point. There is no invention about it obviously, as it is what anybody would do, and what in 1898 was done in the prior art. Thus the Coignet patent of 1869 (Rec. 183, after p. 68) tells about the:

"introduction into the body of the structure of  
\* \* \* scraps of twisted or irregular-shaped irons  
for the purpose of strengthening the same and giving  
it greater cohesive strength."

Reinforcing in the toe is shown in the Jackson patent, right hand portion of bars *n* (Rec. 186, after p. 68); in the British patent to Brannon of 1894 (Rec. 236, before p. 79), the left hand lower portion of Figs. 31, 33, 35 and 36. Those are all toes reinforced to prevent the wall from overturning. Also the Planat 1896 wall has a toe or projection at the lower left hand corner into which the horizontal steel bars project to the limit and reinforce the toe.

That the toe reinforcing is independent, as claimed, or connected with the other reinforcing, seems to be utterly immaterial, in view of the plaintiff's theory of the action, namely, that the independent reinforcing bars in the wall are all united into one structure by reason of the concrete bond, whereby they are held. So there is absolutely nothing new or inventive in the toe idea.

## SOME LEGAL PHASES.

*There was no invention in 1898, or later, in placing ordinary metal reinforcing material in any weak part of a concrete wall or the like.*

This, as shown by the Coignet patent and the prior art herein generally, was a common expedient.

If the juncture between the upright and base portions of a retaining wall, as shown in Fig. 28 of the *Bauzeitung* publication, were weak, as it would be obvious to anybody, there would be no invention in putting iron bars in the concrete across that weak joint. The prior art here shows that anybody would have done that.

It has been the common practice in every unskilled occupation to strengthen the unstable parts of any structure with reinforcing iron and in this only mechanics and no invention is involved. *Crouch v. Roemer*, 103 U. S. 797; *Star Bucket Pump Co. v. Butler Mfg. Co.*, 198 Fed. 856-863.

Placing a brace in the frame work of a machine to enable it to stand up to its work is not invention. *Barnes Co. v. VanDyck Co.*, 213 Fed. 636.

In fact, bracing in so many ways is of such common use in machines, that, if the necessity of having a brace in any piece of mechanism is established, any person skilled in the art could readily introduce it and without invention. *Rose Mfg. Co. v. Whitehouse Mfg. Co.*, 201 Fed. 926-928.

Reinforcing the sides of a corrugated board box by wooden veneer or any other reinforcing is not invention. *Le re Ferres*, 192 O. G. 745.

Where it has been customary to place a large number of short rods in a large concrete structure at the point of great tension and where it will wear, there is no invention

in using continuous rods located at such point. 170 O. C. 246.

It has been held not to be invention to make the part of a bicycle frame, which receives the gear strain of the pedal shaft, strong enough to withstand that strain. *Pope Mfg. Co. v. Arnold*, 193 Fed. 649-652.

A mere enlargement of a shoulder pad to enable it to do its work is not invention, any more than strengthening it would be. *Schweichler v. Levinson*, 147 Fed. 704-708.

A device made or disclosed before the patent, anticipates that patent if such device would infringe the patent when made later than the patent. *Knapp v. Morss*, 150 U. S. 221.

*Attitude of the Courts in the United States on Inventions for Reinforced Concrete Constructions.*

The courts have not looked with much favor upon the patents granted for concrete constructions reinforced by bars, as will appear from the following list of cases. Some workers in this art, and for a time the Patent Office Examiner, seemed to have gone wild in the matter of patents for reinforced concrete constructions consisting chiefly in locating reinforcing bars at points needing reinforcing. Thus, Mr. Luten, one of Mr. Bone's experts in our case, testifies (Rec. 443), that he applied for about eighty patents on reinforced concrete constructions, and had received about forty-two patents. Several of these got into the courts, as will appear from the decisions below, and have been uniformly held void for lack of invention. These are an unjust handicap to legitimate concrete construction business.

*Hennebique Construction Co. vs. Armored Concrete Construction Co.*, 183 Fed. 300, D. C. Maryland, and 169 Fed. 287, 4th C. C. A.; Hennebique patent No. 611,907, for

a cement joist or girder strengthened by iron rods or bars, *narrowly construed* so as to avoid infringement.

*Turner vs. Moore*, 198 Fed. 134, D. C. Minnesota; patent to Turner No. 985,119, for skeleton concrete construction *narrowly construed* so as to hold there was no infringement.

*Ransome Concrete Co. vs. German-American Button Co.*, 201 Fed. 528, 2nd C. C. A.; Ransome patent No. 694,580 for reinforced concrete floor extending through the wall to the exterior face of the building, the lower court was reversed and the claims *narrowly construed* so that there was no infringement.

*Turner v. Moore*, 211 Fed. 466, 8th C. C. A.; Turner patent No. 985,119, for reinforced concrete building construction, *held void*. The question of invention by placing bars in concrete where it was needed to strengthen the same, was considered.

*Carter v. Burtch Plow Works*, 211 Fed. 481, N. D. Ohio; Carter patent No. 777,714, for a culvert, *narrowly construed* and held not infringed.

*Luten vs. Sharp*, 217 Fed. 76, D. C., Kansas; Luten patent No. 853,201, for concrete bridge having a floor with walls at each side with reinforced members embodied transversely in the floor and extending up into the walls, *narrowly construed* and held not infringed.

*Thatcher v. Baltimore*, 219 Fed. 990, D. C. Maryland; Thatcher patent No. 617,615, for improvements in arched bridge construction, *held valid* and infringed.

*Drum v. Turner*, 219 Fed. 188, 8th C. C. A.; Turner patent No. 698,542, for metallic concrete flooring without supporting beams, *held valid* and infringed.

*Trussed Concrete Steel Co. v. Goldberg*, 222 Fed. 506, 6th C. C. A.; Kahn patent No. 768,284, for combined steel

and concrete beam, *narrowly construed* so as not to be infringed.

*United States Column Co. vs. Benham Column Co.*, 225 Fed. 55, E. D. N. Y.; Thorn patent No. 835,717, and other patents for concrete filled iron columns for buildings, *held valid and infringed*.

*Besser v. Merillat Culvert Co.*, 226 Fed. 783, S. D. Iowa; Besser patent No. 452,869, for collapsible form for building culverts, *narrowly construed* so as not to be infringed.

*Luten v. Sharp*, 234 Fed. 880, 8th C. C. A.; Luten patents Nos. 830,483; 851,183, 853,203; 853,204; and 989,272, all for reinforced concrete bridges, *construed so narrowly as to be held not infringed*.

*Turner v. Lauter Piano Co.*, 236 Fed. 252, D. C. New Jersey; Turner patent No. 1,003,384, for steel skeleton concrete construction, *held invalid*.

*Turner v. Deere-Webber Bldg. Co.*, D. C. Minnesota; Turner patent No. 985,119, for steel skeleton concrete construction, *held void* for lack of invention and also not infringed.

*United States Column Co. v. Benham Column Co.*, 238 Fed. 200, 2nd C. C. A.; Thorn patents No. 835,717; 844,973; and 844, 974, for building columns having reinforced ribs imbedded and extending from one cement filled column through the cap into the base of the superimposed column, *held void* for lack of invention, reversing the lower court, 225 Fed. 55.

*Turner v. Lauter Piano Co.*, 248 FeFd. 930, 3rd C. C. A.; Turner patents No. 985,119 and 1,003,384, each for steel skeleton concrete construction, *held void* for lack of invention in view of the prior art.

*Turner v. Deere-Webber Bldg. Co.*, 249 Fed. 752, 8th C. C. A.; Turner patent No. 985,119, for skeleton reinforced

concrete building construction, *held void* for lack of invention in view of the prior art.

*Luten v. Whittier*, 251 Fed. 590, 6th C. C. A.; Luten patent No. 853,203, for reinforced concrete bridge having spanned walls, and No. 1,070,903, for reinforced bar for concrete, both *held void* for lack of invention.

*Luten vs. Washburn*, 253, Fed. 950, 8th C. C. A.; Luten patents Nos. 852,970; 853,202; 979,776; and 989,772, for reinforced concrete construction, all *held void* for lack of invention in view of the prior art, and prior litigation on reinforced concrete constructions reviewed.

*Luten vs. Wilson Reinforced Concrete Co.*, 254 Fed. 107, D. C. Nebraska; Luten patent No. 999,663, for concrete construction, *construed narrowly* and held not infringed, and Luten patents Nos. 818,386; 843,202; and 853,203, for reinforced concrete bridges *held void* for lack of invention in view of the prior art.

*Luten vs. Allen*, 254 Fed. 587, D. C. Kansas; Luten patent No. 818,386, for reinforced concrete bridge, *held void* for lack of invention and prior decisions of the Supreme Court in point reviewed.

*Luten vs. Young*, 254 Fed. 591, D. C. Kansas; Luten patent No. 853,203, for reinforced concrete bridge, *held void* for lack of invention.

*Luten vs. Marsh*, 254 Fed. 701, S. D. Iowa; Luten patents Nos. 852,907; 853,292; 853,203; and 934,411, for reinforced concrete bridge constructions, all *held void* for lack of invention.

In the foregoing list in 23 instances the courts have held patents on reinforced concrete constructions *void* and they have construed them so *narrow* as to avoid infringement in 13 instances, and have held them valid and infringed in only three instances.

In *Luten vs. Washburn*, 253 Fed. 950,953, the Court of Appeals held:

"So it is the positioning of the reinforcing rods that is called invention. \* \* \* \* \* It would seem to necessarily follow that it would require mechanical or engineering skill only to locate in any particular structure where the tension was, and the same skill to determine where the steel should be placed to resist such tension; but this would not be invention, which alone is patentable. \* \* \*

In view of what was old and well known at the date of the patents, we can see no invention in the claims in suit. The wing walls in connection with bridges were old, the tying of the wings to the abutments was not new, and the employment of metal rods in connection with concrete, to strengthen the material and cause it to remain intact, was well known. We therefore agree with the Court of Appeals of the District of Columbia, in the case of *In re Luten, supra* (237 O. G. 917), when it said:

'All therefore that appellant did was to put together by the exercise of the simplest mechanical skill things old in the art, to perform functions long known, in a matter anticipated in prior patents.'

#### PRIOR PUBLICATION DEFEATS PATENT.

In the Circuit Court of Appeals the plaintiffs contended they admit that the walls shown in the *Bauzeitung* and the *Planat* 1896 publications are cantilever walls, but say that those walls were not built and tested. There is nothing in the law requiring that devices clearly disclosed in prior publications must have been built and tested. In simple things like a reinforced concrete retaining wall, that is needless.

The statute says (U. S. R. S., Sec. 4886) that in order to be patentable an invention must not have been "*described* in any printed publication in this or any foreign country



before his invention or discovery thereof, or more than two years prior to his application." (Also Sec. 4920.)

The only question, therefore, that can arise about such matter is as to the sufficiency of the disclosure of the publication. The cases usually cited against an obscure disclosure relate to complicated mechanisms, such as the Westinghouse air brake, which was a very complicated combination of parts.

A prior publication, if it disclose the invention, anticipates the patent even if such prior device had never been built. Walker on Patents, 57; *Miller v. Meridian Bronze Co.*, 80 Fed. Rep. 525.

If a mechanic, or one skilled in the art, would have supplied what the prior publication or device lacked or omitted, in order to make the patented device, such prior publication anticipates the patent. *Chase v. Fillebrown*, 58 Fed. Rep. 378.

If the description in a prior printed publication is so full, clear and exact that those skilled in the art would be enabled to make the patented device, the patent is anticipated by such publication. *Cohn v. U. S. Corset Co.*, 93 U. S. 366; *Downton v. Yeager Milling Co.*, 108 U. S. 466; *New Departure v. Bevin*, 73 Fed. Rep. 469.

There is full disclosure in the Planat 1896 publication and that full satisfies the estate. The drawing itself is a full disclosure of what therein appears; and the addition of the oblique brace rods is plainly described in the following language:

"In constructions of this nature it is evidently the fixation which attracts all the attention of the constructor. One can, however, consolidate it also by means of some bars placed at 45 degrees in the dan-



*gerous angle* and imbedded in the two perpendicular walls."

This is a full disclosure. But Planat goes further and gives a scientific analysis of the construction and dimensions and materials and stresses and the scientific formulas relative thereto so that those skilled in the art would have a very full scientific understanding of it.

The disclosure in the Planat 1896 publication is much more full and complete and scientific than the disclosure in the two publications shows the absurdity of appellant's contention. The invention was "described" in a prior publication, as the statute provides.

#### INFRINGEMENT.

Marion County wall No. 420 (Rec. 23, after p. 16) is admitted not to infringe (Rec. 20), as it does not show the inclined heel or the toe reinforcing, although it shows everything else.

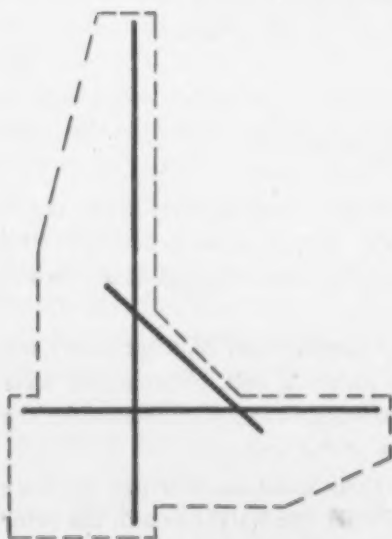
Walls Nos. 252 and 407 (Rec. 21 and 25, after p. 16) are said to infringe all of the claims in suit, because they have the inclined heel or reinforcing at the juncture between the base and upright portions of the wall.

But it is not seen how these walls can infringe the Bone patent when they are made like the wall shown in the prior art. (See p. 24, after p. 16). As explained by Mr. Fritz, the contractor (Rec. 23), all the defendants did was to put a little concrete in the mold and then place in the horizontal

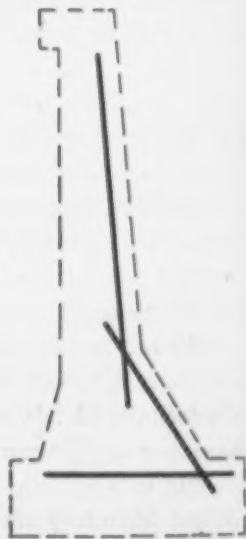
bars, then put in some more concrete and some inclined bars, and then put in some more concrete and tisek in some vertical bars. The bars were all independent of each other, and they put them in where they thought the wall needed reinforcing just as anybody would do and would have done before 1898.

Planat in 1896 placed horizontal bars in the base portion and independent vertical bars in the upright so that the two would overlap as in defendant's walls, and he said that, if desired, place oblique bars at 45 degrees to the other bars (Rec. 96), on account of the "dangerous angle."

### REINFORCING DIAGRAMS



PLANAT 1896



MARION COUNTY.

Planat in 1894 put in separate bars extending from the top to bottom as "nervures" or ribs so that the portions of the bars at the "dangerous angle" were inclined. The others in the prior art put in braces which may be called counterforts in order to strengthen the wall at the "dangerous angle."

Since the defendants did nothing but follow the teachings of the prior art, it is not seen how walls Nos. 252 and 407 can be considered infringement of a patent issued after that prior art.

Defendants' wall No. 408 (Rec. 25, after p. 16) is admitted to infringe only claim 16 (Rec. 19), as it has only the toe reinforcing and not the inclined heel. All the defendants did was to put reinforcing rods wherever they thought they were needed, just the same as in the Planat 1896 wall and as taught in the Coignet patent. There is nothing special or peculiar about defendants' toe reinforcing and in 1898 or at any time afterwards anybody has had the right to reinforce the toe of a retaining wall, in spite of the Bone patent.

Since the defendants' walls were made in substantial accordance with the old walls prior to 1898, and without a single new idea in them, it is not seen how they can be held to infringe a patent applied for in 1898.

If the claims in the Bone patent be limited to the peculiar reinforcing shown and described, then it is admitted that there is no infringement for all the parts there were metallically connected with each other into a total unitary frame having some peculiarity possibly, and would not cover a separated rod reinforcing which is fully disclosed in the prior art.

## CONCLUSION.

It is evident from the foregoing that claims 1, 13, 15, 16 and 17 of the Bone patent are entirely too broad and are void in view of the new prior publications considered in this case for the first time.

It is equally evident that said claims cannot be so broadly construed as to cover defendant's walls which are shown to have been like the walls of the prior art and not in accordance with the details of the Bone patent.

The decision of the lower courts, therefore, should be affirmed.

Respectfully submitted,

V. H. LOCKWOOD,  
*Counsel for Defendants.*